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Edited by HENRY C. PEARSON—Offices, No. 150 Nassau Street, NEW YORK.

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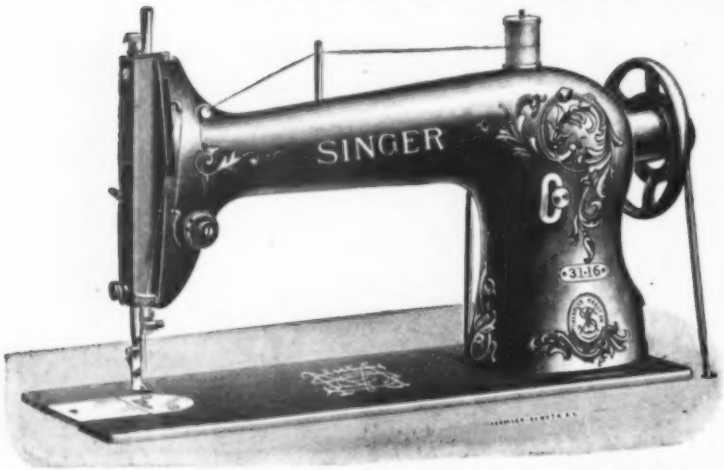

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WHY WE ARE PROSPEROUS.

THE country is prosperous. It usually is, but just now the fact is exceptionally apparent. It is admitted without qualification in circles abroad where it has been usual for any statement favorable to business conditions in America to be credited to the Yankee tendency to boast. The London *Times*, for instance, prints a leader on the recent great increase in wealth of the United States, as indicated by the fact that the railroad property of the country is now mainly owned at home. But more important than the changed attitude of European sentiment in this regard is the testimony of recent American statistics from every accepted source—commercial or governmental. The census figures for 1900—made public this time with unprecedented promptness—compared with the returns for 1890, make an astonishing showing of increase in the agricultural population, in its wealth, and in the profits of farming. The growth of manufactures, too, has been marked, including the development of industries that are practically new to this country. There are to be considered, also, the returns of our foreign trade, of more recent date, upon which only one construction can be placed—that they record a prosperous condition.

On another page of this journal is roughly summarized a review of trade conditions appearing recently in *The Iron Age*, which may justly be described as making a remarkable showing. Without doubt an equally careful survey of any other branch of trade, taking the country as a whole, would fully corroborate the reports collected in the hardware branch. Every important railway system in the country has under way an amount of work for the betterment of its property that calls, in the aggregate, for a vast amount of material and labor. There are municipal improvements in progress everywhere that require immense expenditures. In New York alone an underground railway is being constructed, under a $35,000,000 contract, besides costly bridges and public buildings. At the same time the rebuilding of the city goes on apace, that the same amount of land may accommodate a greater population, and with more comfort. All of which means a ready market for labor, at remunerative wages, and the consumption of quantities of material that not so long ago would have seemed fabulous.

The country ought to be prosperous. Any other condition would mean that the generations of industrious, intelligent, progressive, honest millions who have worked with brains and brawn, on lands owned by themselves, and under favorable and just laws, had worked in vain. Failure under such circumstances would prove discouraging to efforts toward progress, in every land and clime, for a long time to come. The prosperity of to-day, which compels the attention of the world, is but the aggregate success of thousands and millions of families who have worked long to attain it, and is no cause for wonder. Of course there will be other years when the picture will be less attractive. The farmers cannot hope for the largest crops every year; the demand for steel cannot increase always at the present rate; there must be periods when the foreign demand for food and

manufactured wares will be less than now. But the actual wealth of the country will not be less because some years the farms are less productive, or prices for products lower; or because the demand for labor is slacked.

There are, of course, dark spots even on the sun. There is a great strike in progress in one branch of the coal industry, with injurious effects upon many not directly engaged in this industry—a renewal of a fight that has often been waged in the same region and which may not be settled finally in our era. There are tinplate mills idle, because their combined capacity is too great for the demand. And there are regions where the crops have failed, as happens everywhere sometimes. The indebtedness abroad of this country is large, but with this difference from our foreign debts formerly: Then they represented the cost of our great utilities, which were under mortgage to secure the debts, whereas the borrowing done now is of money for current use in business, such as every manufacturer does from his local banker.

It is hardly necessary to add that the condition of the rubber industry is most satisfactory, since this is the branch of trade which, in the past, generally has been the last to feel the effect of general depression and the first to recover from it.

THE PITY OF IT.

IT is really too bad that Census Bulletin No. 190, on "The Utilization of Wastes and By-Products," by Henry G. Kittredge, should have attempted to deal with waste rubber, for what is said on this subject not only is wholly inadequate, but it is pitifully inaccurate. In the first paragraph he says: "One thing that formerly rendered rubber comparatively valueless was because of its being vulcanized. - - -" This, of course, is carelessness on the part of the writer. He means *old* rubber, or vulcanized waste, and should have said so. Continuing, in the same sentence, however, he sins grievously in saying "- - - - which rendered it of little use for manufacture, due to the fact that it could not be *remelted* for mixing with new gum, because of the *sulphuric treatment* it had received."

Who in the whole rubber trade *melts* rubber, or who wants to melt it? What would one have but a soft tar like fluid if it was melted? And as once melted it will stay in that shape, sticky, fluid, black, intractable, unworkable, offensive, how on earth can any one—even the experts of the Census Bureau—*re*melt it? Further, the best part of the "sulphuric treatment" in rubber reclaiming is that it destroys cotton fiber and in no way affects the rubber. Does Mr. Kittredge imply that no more acid reclaiming is done? He says "this difficulty is now overcome, and old rubber is blended with new," etc. Which difficulty—vulcanizing, remelting, or the sulphuric treatment?

Rubber manufacturers and chemists, the world over, will of course laugh when they read the Kittredge essay on waste rubber, yet it is a pity that an industry so well known and so important as that of rubber reclaiming, that has millions of dollars invested in great factories, that in the United States alone annually recovers from 50,000,000 to 60,000,000 pounds of rubber from waste, should be so dealt with. Particularly is this true when from a score of sources could have been obtained facts and figures and an accurate description of the principles involved in reclaiming. Then too, if the Census office has blundered so in this particular, how about its articles on other industries? Are the rubber manufacturers likely to respect them? Of course the harm is done—that is as far as the Census publication is concerned—but lies travel far and fast, and publications equally ignorant are copying verbatim the Kittredge blunders and spreading them broadcast.

RUBBER SHOES FOR THE INDIANS.

THE annual award of contracts for supplying rubber boots and shoes—and some other things—to the Indians yet dependent upon the United States government, leads the New York *Times*, in an editorial on "The Indian in Gum Shoes," to reflect upon the degeneracy of that "once proud and virile, if not altogether admirable, race." With the donning of waterproof shoes by the successors of Philip and Tecumseh, Minnehaha and Nokomis, goes "the last remnant of respect which the average American citizen can have for the North American Indian," and the end of any sentimental regard which may have existed for the picturesque aborigine exiled from the hunting grounds of his fathers.

The Red Man has, indeed, changed from his former estate—whether for better or for worse, or who is to blame for whatever of wrong may have been done, it is not for us here to consider. But he is to be congratulated upon his introduction to the rubber shoe. It betokens civilization, and no higher sentiment animated "our wise and pious ancestors" (to quote from the constitution of Massachusetts) than their desire to lift the benighted natives out of their savagery. It was duty in this respect that led good men and true to desert their homes beyond the seas and put themselves in exile in this land of hardships. But because the objects of their labor of love refused to see some things in the same light as the newcomers, the work of civilizing them was given up as a bad job, and the belief accepted that "the only good Indian is a dead Indian."

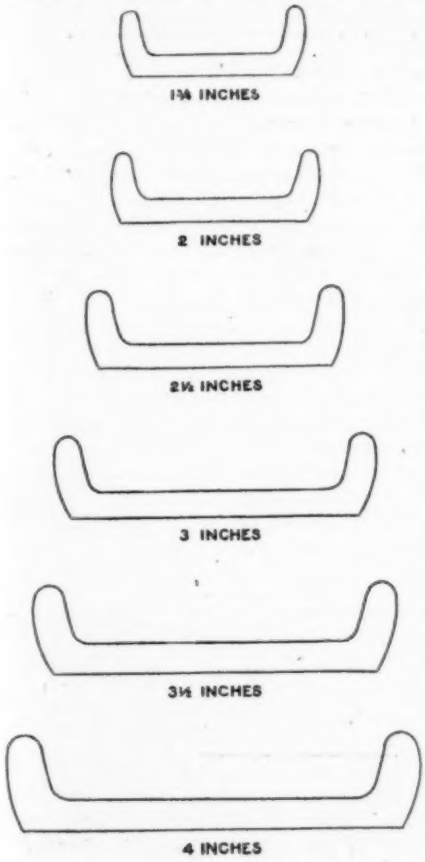
John Eliot's Indian Bible and catechism left small impress upon the lords of the forest and the chase. The would-be civilizers—was it because of being incensed at their failure?—thereupon drove the unregenerate natives beyond their sight and left them to go unrestrained to perdition. But that was before Goodyear and vulcanization and rubber overshoes. To-day there are North American Indians who till the soil and trade, and dress and eat and educate their children, after the manner of white men, having been helped to this stage of advancement by a different policy than was adopted toward them by the pioneer settlers, until they are beyond dependence upon the government's bounty. Such Indians as yet have to be treated as wards must be regarded as giving evidence of improvement when they begin to call for rubber boots and

shoes, with proper discrimination in styles and sizes and fit. These articles are conducive to health and comfort and cleanliness—without which there can be no civilization and the lack of which made impossible in life such Indians as exist in fiction. And shall the Indian be denied "rubbers" because the very idea destroys the illusion which made the "Indian novel" attractive?

There is here a practical consideration for the trade. If the native red man of North America is capable of such development as undoubtedly has been made by some of his race on the reservations in the West—the world hears less of it than of the former bloody uprisings that brought fame to General Miles—no race is hopeless as possible customers for rubber shoes, and the demand for such goods need not be confined to the present ranks of civilization. The whole world will yet wear rubbers, for the tendency in every land is to approach, even if slowly, the highest stage of development in any other. Meanwhile let the missionaries continue their work, but let them consider whether they will not be aided in it by carrying rubber shoes with them as a civilizing agency.

A STANDARD STEEL CHANNEL FOR TIRES.

HITHERTO there have been not less than ten different standards for steel channel used in applying solid rubber tires to vehicles. There has been no standard recognized among rubber manufacturers, each one making his tires to fit the particular channel he used. As a large part of the rubber tire business consists in re-rubbering wheels already fitted with channel, it has very often happened that the rubber would not fit the channel perfectly. This necessitated taking off the channel, and putting on a new one, or, as was more often the case, putting the rubber on regardless of the fit, and thus making a defective job. As a result, a great many rubber tires have given poor service for this reason alone, as it is absolutely essential to have a correct fit between the rubber tire and the steel channel.



To The B. F. Goodrich Co. (Akron) belongs the credit of starting the movement which has resulted in a universal Standard channel having been adopted by the manufacturers of solid rubber tires in the United States. The American Steel Hoop Co., of Pittsburgh, are now making a complete set of new rolls for producing Standard channel, which will be ready in a month, perhaps. The following tire manufacturers have agreed to adopt channel made in accordance with this Standard, and will furnish their tires to fit:

The B. F. Goodrich Co. (Akron, Ohio.)
The Consolidated Rubber Tire Co. (New York.)
The Goodyear Tire and Rubber Co. (Akron, Ohio.)
The Diamond Rubber Co. (Akron, Ohio.)
The Hartford Rubber Works Co. (Hartford, Conn.)
Morgan & Wright (Chicago, Ill.)
Calumet Tire and Rubber Co. (Chicago, Ill.)
The Victor Rubber Co. (Springfield, Ohio)
The Kokomo Rubber Co. (Kokomo, Ind.)
The Gutta Percha and Rubber Manufacturing Co. of Toronto, Ltd.
The India Rubber Co. (Akron, Ohio.)
The Pennsyvania Rubber Co. (Erie, Pa.)

The lasting benefit of this action will be apparent to all who have had anything to do with rubber tires. Dealers in carriage hardware everywhere can now carry steel channel with the assurance that it is adapted for all tires, regardless of the manufacturer. At present there are a great many tons of channel in stock that does not conform to the Standard adopted. Probably most of this will be sold as scrap, and the channel now fitted to wheels, which does not conform to Standard, will probably be changed when the wheels are re-tired, so that the trade may expect soon to see the Standard channel in universal use.

A RAILROAD PROJECTED FOR BOLIVIA.

A PAMPHLET entitled "Colonisation et Exploitations dans la République de Bolivie (Brussels: 1902)" is devoted to the projected railway from Potosi, Bolivia, through Santa Cruz to Bahia Negra, on the river Paraguay, at about 20° N. latitude, where the latter river forms the eastern boundary of Bolivia. The Paraguay, navigable to that point, discharges into the Parana, and that in turn into the Rio de la Plata, at the mouth of which is located the port of Buenos Ayres. For the encouragement of this enterprise a liberal concession has been granted by the Bolivian government to L'Africaine Banque d'Etudes et Enterprises Coloniales, of Brussels. The idea is that the profits of the proposed railway are to depend rather upon the development of the country than upon direct financial aid from the government. There are conceded to the company, however, extensive tracts of public lands, in alternate lots adjacent to the line of the road, certain grants being made in fee simple and certain other lands being subject to the payment of 1 franc for 10 hectares (=24.71 acres). The plans of the company involve the gratuitous cession of one-half of the lands acquired, for purposes of colonization, with the idea that the character of the climate, soil, and native products is such, when improved transportation facilities shall have been introduced, as will appeal strongly to immigration from Europe. The resources of the country to be traversed, particularly in the province of Santa Cruz, include important supplies of rubber. The total length of road proposed, including branches, is 850 kilometers (=527 miles).

THE MACKAY PACIFIC CABLE.

THE president of the United States on August 9 made formal announcement of the conditions which must be complied with before his consent will be given to any measure which may be brought before congress granting a concession to the Commercial Pacific Cable Co. to lay a cable across the Pacific. The company named had filed at Washington an application for the consent of the government to the laying of such a cable, proposing certain conditions, the acceptance of which would constitute a contract. In his answer to their application President Roosevelt has pointed out certain modifications which must be made in the terms proposed. The president's action, however, is not final, since the attitude of the government is that any agreement which may be reached with the cable company should be ratified by congress to give it full effect.

The memorandum approved by President Roosevelt consents to the laying of a cable from the Pacific coast of the United States to the Hawaiian islands, Midway islands, Guam, the Philippines, and some point on the coast of China; this concession to confer no monopoly as against any other company that might be formed in the United States to lay cables in the Pacific; the company not to combine or associate itself with any other cable company now existing, to regulate rates; the company's cables to touch only on American soil between the United States and China; the rates charged not to exceed those proposed by the company in a memorandum lately filed at Washington;* government dispatches to have priority over all others; the United States to have the right at any time to purchase the cable at an appraised value; the government of the United States to have authority to assume full control of the cable in time of war; all operators and other employés of the company, other than laborers, to be American citizens.

The Commercial Pacific Cable Co., in return for such concessions to the government as these terms involve, is to have the use of the soundings taken by the navy department between Honolulu and the Asiatic coast, by means of which it will be possible to lay the cable at least a year earlier than if the company had yet to take new soundings. Besides, the government will agree to obtain the consent of China to the landing of the cable on her shores—in spite of the fact that exclusive privileges are now enjoyed there by a British cable company—under the clause in the treaty between the United States and China which entitles the former to all the rights in the latter country of "the most favored nation."

As before stated in the INDIA RUBBER WORLD, the first section of the proposed cable—to connect San Francisco with Honolulu—has been made already, and a contract has been signed for the manufacture of the remaining sections, and the company had announced its intention of proceeding with the work whether its application for a concession was granted or not. It is probable that the terms approved by President Roosevelt will not be wholly satisfactory to the company; for example, the company had planned to use the cable already existing between Manila and Hongkong, whereas the government demands that the company shall construct and operate a line of its own between those points. But it is not anticipated that the company will refuse to accept the proposed contract as a whole. By the way, the government is not showing any partiality to the Commercial Pacific company; although the question of a Pacific cable has been discussed for years, this is the first definite proposition that has come before the government for its action.

* The company promised that its rates should not exceed 50 cents per word between San Francisco and Honolulu at the beginning, this to be reduced to 35 cents within two years; and not to exceed $1 per word between San Francisco and Manila and San Francisco and China; the government to be entitled to one half these rates. The existing rate to Manila is $1.56 per word.

CABLE AND INSULATION NOTES.

A PIECE of submarine cable, ¾ mile in length, insulated with Hooper's rubber compound, from a line laid in 1881 for the Cuba Submarine Telegraph Co., was the subject recently of a test by Clark, Forde & Taylor, a London firm of consulting electrical engineers. They report: "Manufactured in 1873. Laid off Cienfuegos, Cuba, in 1881, under special arrangement for guarantee. Picked up in 1350 fathoms, April, 1902. Received at Hooper's works, Millwall Docks, June, 1902. Our tests of this core show that after thirty years it is still in perfect electrical condition. The examination of a foot specimen showed that the insulator was in good mechanical condition, and that the copper conductor had not suffered from the attacks of sulphur."

=In regard to the debenture issue of 21,000,000 marks required for the second German Atlantic cable, mentioned in the last INDIA RUBBER WORLD, it is reported that applications for considerably more than 300,000,000 marks were received.

=According to the *Electrical Review* (London), upon the completion of the British Pacific cable between Vancouver and Australia, the laying of a link cable to connect Fanning Island with Honolulu is contemplated. This will connect together the All-British and the Commercial Pacific cables, and will afford an alternative and inexpensive route to both.

INTERCEPTING WIRELESS TELEGRAMS.

[FROM THE "GUMMI-ZEITUNG," DRESDEN.]

RECENTLY we made the statement, based upon one in THE INDIA RUBBER WORLD, that the general introduction of wireless telegraphy was still a matter of conjecture, the danger of having telegrams intercepted prohibiting its universal use. A recent occurrence has created quite a commotion and is of vital importance to wireless telegraphy, and bears out the statement made. An American vessel, at a material distance, intercepted the telegraphic communication between the English steamers *Lucania* and *Campania*, and then placed the stenogram which it had taken, as a joke, at the disposal of both vessels. By this one of the most important prerequisites, the secrecy of telegraphic communication, is made very questionable. The statements indulged in when wireless telegraphy was first introduced, that any one could intercept them, received but little credence; but when the invention, to perfectly attune the sending and receiving apparatus, was made, it was asserted by some that it would be impossible to take telegrams for every other instrument. The two English vessels were equipped with the Marconi system. Whether the other systems will act differently, is a matter to be awaited.

RUBBER heels are reported to be in great vogue in the village of Spencer, Indiana, which is surrounded by hills. These heels are reported to be good for hill climbing. One cobbler there is mentioned as having saved in two years over 1000 paper boxes, which had come to him containing rubber heels and which he had emptied in supplying customers.

TO TEST TIRES.—It has been suggested that a valuable test of tires would be for cars to run at stated intervals over patches of loose, unrolled road material, and that the entered tires after the completion of the 3000 mile run should then be tested to actual destruction.

EVIDENCES OF GREAT PROSPERITY.

A NOTABLE summary of business conditions appears in *The Iron Age* (New York, July 31), in the shape of reports from 254 representative hardware merchants, scattered over all the states in the American Union. While these concise, business like letters are devoted primarily to the hardware trade, they relate incidentally to the leading industrial and business interests of their respective localities—agricultural, manufacturing, mining, or what not. Throughout the whole is apparent a vein of conservative expression, as befits the heads of houses many of which have long been engaged in business, and an absence of any enthusiasm engendered by "booms" or speculation. The letters have not been asked for with a view to promoting any particular sentiment, but in the ordinary work of *The Iron Age* in presenting occasionally a picture of the business situation, and as the names and locations of the merchants reporting are not printed, the latter have nothing to gain or lose by giving other than correct statements of conditions as they see them. There are reports of good trade in the last six months, and reports of bad trade, while the predictions for the second half of the year range from extreme optimism to extreme pessimism. But on the whole these letters reveal an amazing condition of prosperity.

"The demand for goods has been greater than in any previous year" (Delaware); "our business excelled anything we ever did before" (Ohio); "business has increased from 20 to 25 per cent." (Michigan); "this is our 104th year in business, and the spring trade was the largest we ever had" (Pennsylvania); "away beyond all expectations" (Iowa); "demand greater than in any former year" (California)—this is how the letters begin. Four out of five reports are in this encouraging vein, while the others mention strikes in mining regions, drought in farming sections, or some other local detriment to business which they believe will be of short duration.

It is from the agricultural states that the most enthusiastic reports come. More than half the letters refer to heavy crops, good prices, and prosperous farmers; less than 50 reports are of a different nature. "The financial condition of the farmers was never better" (Ohio); "our farmers are doing a great amount of building and making improvements of every kind" (Indiana); "farm lands have advanced from 25 to 50 per cent." (Michigan); "high prices for farm products are stimulating business" (Illinois); "farmers never had more money" (Wisconsin); "everybody who makes an effort seems to be prosperous" (Virginia); "this will be a banner year for the farmers" (Kansas); "the prospects for a good crop were never better" (Missouri); "the farmers are all out of debt and have money to loan" (Iowa); "the high prices of all stock have put farmers in better condition to buy, and for cash" (Washington); "condition of the farmer better than ever before" (Oregon); "the people have paid up many of the mortgages on their farms and are getting generally out of debt" (Maine); "our farmers never had more money" (New Jersey); "the farmers are enjoying prosperity" (Pennsylvania). Wherever these conditions prevail the farmers are buying goods freely and paying cash for them, building houses, and improving their farms. Where crop conditions have not been so good, it is mentioned that at least they are not going in debt. As a Kansas merchant reports: "One small crop will not affect our prosperity."

Collections are specifically referred to as good in 125 reports, and as poor in 50 reports, while favorable conditions may be inferred from most of the others. "Collections extra good" (Ohio); "better than usual" (Maine); "better than since 1892" (Rhode Island); "collections good, except in some cases when customers seem to be letting their bills run behind to invest in stocks, trust companies, etc." (New Jersey); "collections have been unusually good" (Alabama); "collections are good and we are picking up some old scores on account of better times" (Oregon); "most of our customers pay cash; this is the best of all" (New Jersey).

Building operations are referred to very generally, since builders' hardware is so important an item of trade, and in this respect, too, the larger percentage of the reports is favorable, as relates both to city and country. Much building is reported throughout New York state. "We expect to have a busy fall on account of new buildings going up" (Pennsylvania); "more building in prospect than for several years" (Delaware); "building is far in excess of previous season" (Maryland); "demand for builders' hardware better than we have ever known" (Ohio); "more building going on and new enterprises started than usual" (Illinois); "unusual amount of building" (Virginia); "trade in builders' hardware exceptionally brisk" (Louisiana); "building operations are at high water mark" (Minnesota). Several reports state that building has been retarded by scarcity and high prices of material, and strikes of carpenters for higher wages, which fact of itself is regarded as an indication of prosperity. Labor nearly everywhere is reported to be fully employed.

These reports make but slight mention of rubber goods, or, for that matter, of most lines of stock carried by the hardware man, but they are referred to here as describing business conditions which are favorable to every branch of manufacturing for the retail trade. Good crops in most states, disposed of generally at good prices, not only benefit the farmers, but add to the prosperity of villages and cities, increase the wealth of the country, and enable every class to spend more money—and every class of buyers includes consumers of rubber goods.

SOME RUBBER LIKE COMPOUNDS.

ALMOST as long as the rubber business has existed there have been certain compounds in the line of plastics that have a physical resemblance to rubber and that are used where a certain amount of resilience is required. Indeed, in one or two instances they have been sold to rubber manufacturers as new and valuable substitutes for rubber. The basis of these compounds as a rule are glue and glycerine, both of which have an affinity for water which renders them useless in many lines where they would otherwise be valuable. One of these for printers' rollers (the Jackson compound) is made of 16 pounds glue, 16 pounds glycerine, 1 pound borax, 1 pound Japan. A variation of this compound is Borcherdt and Bergman's composition for the manufacture of dolls' heads, hands, and feet. This is 5 pounds of glue, 10 pounds sugar, 2 1/2 pounds glycerine, 3 pounds Perry's white. It is quite similar to the composition of Doebrich: 1 pound glue, ¼ pound glycerine, ½ pound sugar, 1 tablespoonful of flour, with a little albumen and coloring matter. None of the above uses appeal directly to the rubber trade, yet the glue and glycerine compound is quite largely used as a covering for gas tubing. It is a curious fact that gas easily penetrates the thickest sort of rubber tube, but if that tube be covered with the glue and glycerine compound it is practically impervious. The Barr compounds for gas tubing, are 10 pounds glue, 12 pounds glycerine, 4 ounces soap, 1 ounce borax, ¾ ounce copperas. A later and simpler compound comprises 30 pounds glue, 30 pounds glycerine, 1¼ ounces bichromate of potash.

CRUDE RUBBER PRODUCTION AND PRICES.

THE annual circular issued from Liverpool by the importing firm of Hecht, Levis & Kahn embodies the results of a careful attempt to estimate the world's production and consumption of India-rubber, and also the total visible supply on July 1. The figures given, compared with those previously issued by the same firm are:

	1898-99.	1899-1900.	1900-01.	1901-02.
Total production.....*tons*	52,192	53,348	52,864	52,885
Total consumption.....	48,783	48,352	51,136	50,201
Visible supply, July 1.....	4,871	7,869	6,941	6,736

In many cases, of course, it is impossible, in such estimates, to calculate shrinkage between producing and consuming markets, and there are other elements of inaccuracy, but the above are offered as approximate amounts. Again, the "ton" is a variable quantity, in different countries, but accepting the metrical ton of 1000 kilograms as the standard, the estimate for the past twelve months would read:

Total production.....	116,590,271	pounds.
Total consumption.....	110,673,125	"
Visible supply, July 1.....	14,850,186	"

The Pará crop shows an increase of 8⅓ per cent. over last year, whereas the increase in the preceding year was only 3½ per cent. Besides, the recent increase was principally in Pará grades, while the increase in 1900-01 was almost wholly in Caucho. Messrs. Hecht, Levis & Kahn's comments on their statistical showing follow:

PARA KINDS.

CROP.—In spite of low prices and all forecasts to the contrary, the crop of 1901-02 shows an increase of 8⅓ per cent. The receipts of Peruvian kinds amounted to 3575 tons, being an increase of only 1¼ per cent. on previous season, which yielded 31½ per cent. over 1899-1900.

PROGRESS.—Shipments from Pará to America during the season were 14,057 tons, and to Europe 15,880 tons. While in 1900-01 America took 2700 tons more than Europe, in 1901-02 the shipments to Europe were 1800 tons in excess of those to America, which is accounted for by the collapse of a certain large concern in New York, whose unsold stocks of 1500 tons were thrown on the market.

VALUES.—After a final effort of the above mentioned firm, which advanced the price of Fine in August to 3*s.* 10*d.*, values declined almost without interruption to 3*s.* 4½*d.* in January. The bulls, who in view of the financial crisis in Pará, confidently anticipated a shortage of 10 to 20 per cent. in the crop, lost heart when the arrivals in Pará during the first half of the season showed already a surplus of 2350 tons, and this well known New York concern, after striving hard during two years to drive up and maintain prices artificially, was obliged to stop payment. Pará thus being deprived of one of its largest supporters, showed itself willing to meet buyers, and prices further declined until they touched 3*s.* at the end of February. At the beginning of March, on rumors of a sharp falling off in receipts, fresh speculators entered the market, and an advance of 2*d.* to 3*d.* took place, only however to be lost again in April, the season closing with hard cure Fine at 2*s.* 11½*d.*, being the lowest level since 1894.

CONSUMPTION.—While the total deliveries in Europe have been 1400 tons in excess of previous season, those in the United States show a decrease of about 400 tons. This decrease is, however, more apparent than real, as the American stocks at the beginning of the season were fully 1000 tons more than declared, and consequently this quantity ought to be added to the 1901–02 deliveries. Thus also the visible supply of Pará kinds, instead of an apparent increase of 400 tons, would show an actual decrease of 600 tons, and as the Receipts were 2357 tons larger, the Deliveries during the twelve months under review have exceeded those of the previous year by about 3000 tons. On the other hand it will be noted that the deliveries of Mediums show a decrease of about 2000 tons, which indicates that the lower prices have enabled manufacturers to use Pará where previously they had employed other kinds, and for the same reason consumers have probably bought Pará beyond their requirements, so that part of the 3000 tons may still exist as an invisible supply.

PROSPECTS.—It is reported that the new Pará crop will be an early one, but there are no indications that it will prove to be smaller than its predecessor. On the other hand, consumption does not promise to show any marked increase, and though it is not likely that prices will decline much below the present basis, the supplies seem to be sufficient to prevent, for the present, any permanent advance in values. All things considered, we are likely to see in the near future fairly steady markets at about 3*s.*, with small fluctuations below and above.

MEDIUMS.

IMPORTS show a considerable falling off, and throughout the season the supply of the better grades has not been equal to the demand. This is chiefly attributable to unfavorable conditions at the producing centers. Moreover, there is no doubt that the decline in values has had a direct influence on the production of certain Medium descriptions. Antwerp is the only market where the season's arrivals have not been behind those of the previous year, and this may be due partly to the reserve stocks in the Congo stations and partly to the low cost of production in the Belgian Congo. The restrictions imposed by the authorities in the Sierra Leone districts have been effectual in greatly improving the quality of the rubber, which accounts for the comparatively high value it has commanded.

LIVERPOOL.—Direct imports show an increase of 210 tons in Brazilian kinds (comprising Ceará, Pernambuco, Mangabeira, and Maniçoba) and a decrease of 1080 tons Africans, mostly in Gold Coast and Ivory Coast descriptions. The indirect imports of Africans also show a decrease of 180 tons. Compared with last year, we have to record a shrinkage of 1050 tons in the imports and of 820 tons in the deliveries of all kinds of Mediums. To-day's stocks amount to 585 tons, largely consisting of low unsaleable sorts.

LONDON.—Arrivals have been reduced from 2598 tons in 1899-1900 and 1604 tons in 1900-01 to 956 tons this season. This decrease falls chiefly on East and West Indian sorts. Of Penang and Rangoon only 234 tons were imported, against 420 tons in the previous year. The decline in prices has brought out more buyers for these descriptions, and stocks are only 45 tons against 214 tons. Arrivals of Borneo were only 84 tons against 214 tons, and stocks consist chiefly of inferior kinds. The arrivals of West Indian sorts have suffered through revolutions and wars in the producing countries, and were only 166 tons against 385 tons last year. Fine qualities were in constant demand. From Mozambique 182 tons against 202 tons were imported, and fine qualities found ready buyers at ex-

treme prices. From Mattogrosso 155 tons were imported, but only small sales took place, owing to the disinclination of owners to follow the general decline, and the stock is consequently rather important. Mangabeiras, especially the better qualities, were in good demand and all arrivals were readily sold. Mollendo was in fair demand, and while in former years a difference of 1*d.* to 2*d.* was made between this description and Fine Pará, both kinds now stand at the same price.

ALL KINDS RAW RUBBER.

BASED on above statistics, and subject to above explanations, without allowing for natural shrinkage between producing and consuming markets, the total production during the season under review amounted in round numbers to 53,000 tons, being on a par with previous year, and the total consumption to 50,200 tons, against 51,150 during 1900-01. Taking, however, into account the undeclared 1000 tons in America at the beginning of the season, and which ought not to have figured in the deliveries of 1900-01, the world's deliveries during the season just ended were in reality 1000 tons larger than in the previous year. The world's visible supply of rubber stands today at about 6700 tons, and, though apparently only 250 tons smaller than at the same time last year, the real shortage amounts to 1250 tons. HECHT, LEVIS & KAHN.

London and Liverpool, June 30, 1902.

A CONSULAR REPORT ON PARA RUBBER.

REPORTING on the rubber situation in the Amazon valley, K. K. Kenneday, United States consul at Pará, writes [July 7] to his government:

"In the season just begun, it is believed that a record-breaking crop will be harvested. The rubber fields of the lower river, and especially on the islands, are slowly but surely failing, both in quantity and quality; but the decrease is more than made up by the development of new fields and the expansion of the old fields on the Upper Amazon. While all the more important tributaries of the Amazon are supplying their full quota of rubber, and even making a promising increase, interest will focus in the now famous Acre territory and in southeastern Ecuador. In the regions reached by the Purús (of which the Acre is a tributary), Juruá, Béni, Madre de Dios, Javari, Ucayali, Japurá, and other great affluents of the Upper Amazon, which penetrate Peru, Bolivia, and Ecuador, there are illimitable rubber forests as yet unexplored, which will now be gradually developed. Many *seringueiros* (rubber gatherers) are headed for these regions, and it is reported that several syndicates are about to begin operations in new fields in Bolivia and Peru. Bolivia continues to offer inducements for the colonization and development of her vast area of rich rubber and mining territory.

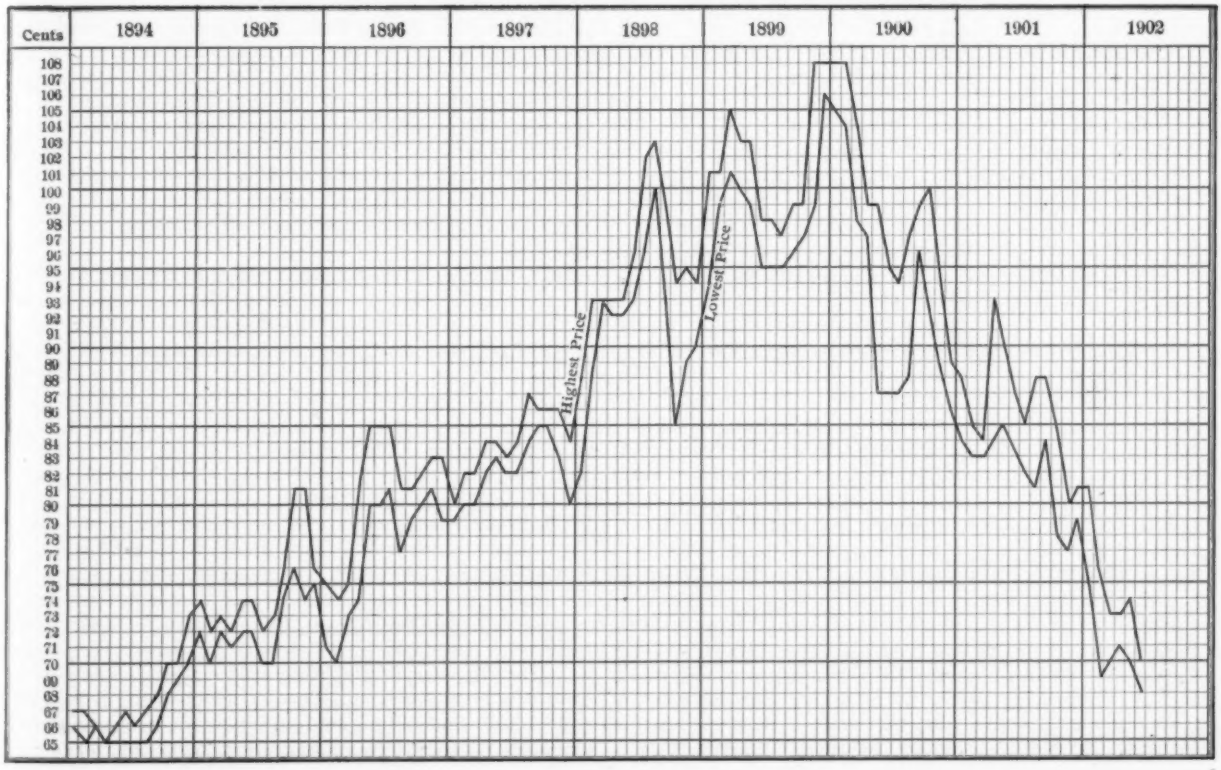
"I am informed that the government of the state of Amazonas has granted the exclusive privilege of receiving, cutting, and packing all the rubber produced in that state to one wharf company [at Manáos]. The creation of this monopoly will injure the rubber trade of this region, but Peru, Bolivia, and Ecuador will be the beneficiaries, as rubber growers and gatherers here are seeking to escape the new restrictions, which entail considerable expense and trouble upon exporters."

Exports of rubber from Pará amounted to 29,997 tons in 1901-2; 27,680 tons in 1900-1; 26,881 tons in 1899-1900; 25,246 tons in 1898-99; 22,218 tons in 1897-98; 22,216 tons in 1897-98

SPOT PRICES OF ISLAND FINE PARA RUBBER AT NEW YORK, SINCE JANUARY, 1894.

FROM QUOTATIONS PUBLISHED MONTHLY IN "THE INDIA RUBBER WORLD."

Lowest and Highest Prices Reported in Each Month for this Grade of Rubber, to July 1, 1902.



THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

THE fact that the race for the Gordon-Bennett motor cup was won with English made tires is no doubt a triumph for home manufacturers, after having had the superiority of Michelin and Continental tires dinned into their ears for so long. We may hope now that the Dunlop company, the makers thereof, will be encouraged to fresh exertions in order to arrive at as near perfection as can reasonably be expected with such a body as rubber. There will shortly take place the special tire trials of the Automobile Club, and, to quote from the London society journal, *The World*, "the trials are being looked forward to as bringing into notice novelties and improved methods of overcoming the exasperating punctures which are so common." I am not too sanguine myself as to the puncture difficulty being easily overcome, but there is no doubt a very great interest being evinced in the matter by all classes of society, more especially since the King has become an enthusiastic motorist. Under the circumstances the question of cost for an unpuncturable tire will not prove a bar to its ready sale to a large extent. There is no doubt that the cab tire of the solid type is in increasing demand, and several rubber firms have lately added this branch to their business. The desideratum of the coach trade is a tough rubber, but of low density, and one or two of our rubber firms have been especially successful in supplying rubber of this quality. Slight porosity caused in the vulcanizing and a tendency to crack on the outside are two of the principal troubles which those who have gone into the manufacture in rather too light hearted a manner have had to contend with. It certainly is not an easy thing to turn out a cab tire possessing all the qualities demanded by the trade, and those who are thinking of going into the manufacture should make sure that they or their employés thoroughly understand the intricacies of detail, as many little defects in manufacture will cause a tire to be unsaleable, though not necessarily really defective. I hope in a short time to say something more fully with regard to some firms who have recently gone into the cab tire manufacture.

TIRE MATTERS.

IN the recovery of rubber from railway brake hose the labor of pulling to pieces is a serious item, being generally carried out by hand. A recently patented process of Mr. R. R. Gubbins, of 95, Pelton road, Greenwich, London, however, does away with a large amount of labor, and indeed reduces the cost from £8 to 1*s.* 9*d.* per ton for bare wages. The process is an ingenious application of rolling mill methods, the machine being suitable for other purposes than that just mentioned.——Judging from all appearances the competition between the various makers of reclaimed rubber is becoming more and more acute, though there is no doubt that the consumption is increasing. I was rather surprised to be informed by an erstwhile manufacturer of a brand of recovered rubber that the market for it had suddenly died out; I happened to know that that sort of rubber was being largely used, and I have no doubt that the business has simply changed hands owing to price considerations. There seems to be very little old rubber now to be picked up without competition; possessors of it have now all got a pretty good idea of its market value and are not easily to be caught by the wiles of those who make its collection and re-sale a matter of regular business. No doubt some of the makers of recovered rubbers will now begin to writhe under the more onerous condition which modern competition imposes on them and will seriously consider whether the game with its attendant worries and risks is really worth the candle. There certainly is an increasing tendency among the rubber manufacturers to carry out their own reclaiming, or, if they cannot manage the whole process to advantage, to buy it partially treated from those who have collected such as contains wire and cloth and removed these extraneous bodies by economical processes of their own. With regard to the buying and selling of reclaimed rubber, there is an increasing desire of rubber manufacturers to have something in the nature of a certificate of quality with their purchases, and as a proximate analysis of the mineral matter, rubber, and oily or resinous matters does not cost much, the reclaimer will find it advisable to conform to the demand in this respect, though as he does not know how his product is to be used, I think he is wise in demurring against giving guarantees.

RECLAIMED RUBBER.

FROM time to time complaints arise as to the unsuitability of rubber for bottle rings, especially in connection with foods containing oily matters. The proprietors of a new food product told me the other day that they could not use rubber, at least not the sort of rubber they had tried, and they were rather at their wits end to know how to fill their acquirements. No doubt there is something in the quality of the rubber, and therefore some firms may be more successful than others in this department. All the same it can hardly be contended that rubber is suitable in the case of vegetable oils, and the subject therefore seems particularly one, the study of which might well be expected to yield satisfactory pecuniary results to any one tackling it in earnest. As regards the rings used in mineral water bottles, the objection to rubber does not hold, or at any rate not to anything like the same extent, and complaints have only been loud in cases where a very common brand of African rubber has been used in place of the Pará which should be considered obligatory for this purpose. Attempts have been made to deodorize the finished rings, but only very little success has ever been obtained by this procedure, and for reasons which it seems hardly necessary to enumerate.

BOTTLE RINGS.

THIS important cable firm, with which is now incorporated the Telegraph Manufacturing Co., of Helsby, was visited on July 10 by a party of the members of the Society of Chemical Industry, on the occasion of the annual meeting at Liverpool. Previous to inspecting the works, the visitors were entertained to a champagne luncheon by the directors—Mr. E. K. Muspratt, who took the chair, being supported by Mr. Atherton, Mr. James Taylor, Mr. Cresland Taylor, and Mr. Ferranti of high tension cable fame. The speech making was cut very brief, as time was short; and a vote of thanks proposed by Mr. Walter Reid, a vice president of the society, and responded to by the chairman, comprised all that was attempted in that direction. Perhaps this paragraph may hardly be considered suitable for insertion among these notes, as in these works rubber is conspicuous by its absence, but an excuse may be found in the interest which the rubber cable people take in their strongest competitor. From quite small beginnings the factory at Prescot has grown until it now covers an area of 15 acres and gives employment to over 2500 men, the rolling and

THE BRITISH INSULATED WIRE CO.

drawing of the copper wire, the making of joint boxes, section pillars, being carried on in addition to the insulating of wires. The company introduced the system of twin lead-covered house wire cables and were the first manufacturers of low capacity air space telephone cables, as also of concentric and triple concentric cables on a commercial scale. Briefly described, the insulation is carried out as follows: The wires are covered with paper strip by machinery and then soaked in hot rosin oil, passing immediately from the oil tank to the lead press, where, at a pressure of 2240 pounds on the square inch, the metallic coating is put on. After the lead comes a further protective covering, either of iron wire or hemp, or both, according to the position which the cable will occupy in use. The finished cables are tested to 2500 volts for a working pressure of 500 volts, and to 10,000 volts in the case of high pressure mains to work at 3000 volts. I don't wish, however, to go into abstruse detail, and may bring this notice to a conclusion with the stereotyped remark that the visitors expressed themselves as much gratified with what they had seen. I may mention that the annual meeting of the Society of Chemical Industry is to be held in New York in 1904, a very cordial invitation from the New York section having been accepted by the general meeting at Liverpool.

PARA RUBBER FROM THE EAST.

THE editorial remarks in the June issue of THE INDIA RUBBER WORLD with regard to the shipments of "Parà rubber" from Ceylon strike me as very much to the point. It certainly does not do to take it for granted that a transported or transplanted tree will yield produce similar to that obtained from it in its natural habitat. Even if it does so it may prove to be a matter of time. If space permitted, a good deal might be said on the changes which have been noted both in animals and plants under the influence of foreign climes; but it will suffice to say that my own experience, limited though I must confess it has been, fully bears out what is said in the June issue as to the inferiority in tensile strength of the Eastern grown Pará rubber. Purity and cleanliness, important attributes though they be, are not everything which has deservedly come to be associated with the name of Pará rubber, and it is certainly good advice to suggest that the results of extended practical trial should be awaited before too sanguine a view is taken of the new product on the market. The samples of which I had special knowledge came from Mergui, in upper India, but their defects were identical with those attributed to the new Ceylon product.

VELVRIL.

I AM informed by Mr. W. F. Reid, the inventor of Velvril, that it is incorrect to suppose that the right of manufacture is solely vested in the Gandy Belt Co. This company has the right of use as far as its particular trade is concerned, but the general manufacture is still carried on near London by the Velvril Co., Limited, of which Mr. Reid is managing director.

THE PROOFING TRADE.

IT cannot be said that any great spurt has been experienced lately in the proofing trade, the depression in which I referred to in my last letter. A great many machines are standing idle, though in the case of some firms this is evidence of falling off in the War office demand for ground sheets, rather than as a decline in macintosh business proper. There is no doubt that some firms have done very well in government orders during the period of the war, though of course they have known that it was merely a temporary era of prosperity, if one can use such a term in connection with a rather disastrous war. If, as a civilian, I may be allowed to offer a little criticism, I should suggest that the ground sheets served out to our volunteers in camp might be renewed with advantage rather oftener, as in several cases I have noticed the rubber to be in a condition to which the name of waterproof no longer applies. It is quite possible that more to this effect will be heard when South African grievances come to be fully ventilated.

CABLE NOTES.

WHATEVER may be the future of rubber insulation for steel mains—and it is not possible to blind our eyes to the fact that its employment for this purpose has suffered a severe relapse—it will assuredly remain in general demand for switch board connections and for the feeders for tramway lines. In these cases the elasticity of the rubber cable is a very important point and in this respect the heavy lead covered cables cannot compete at all. As much as £400 worth of subsidiary cable for connections may be used in a system where the road cables proper are all of the fibrous or bitumen type.——The Liverpool Electric Wire Co. and the Anchor Cable Co. of Leigh, Lancashire, are the latest additions to the cable making industry.

ANTWERP RUBBER MARKET.

THIS market seems to gain in favor amongst our manufacturers at the expense of Liverpool—that is, as far as African rubbers are concerned. The grading is carried out in a more systematic manner, and the bulk is delivered equal to sample. The regular British travelers employed are stated to be a greater convenience than is the Liverpool method of warehousing.

RUBBER SOLUTION.

ONE of the firms making this a specialty is the Norton Folgate Rubber Co. named from the locality off Bishopsgate street, London, in which it is situated. Mr. Barnett Abrahams, the proprietor, has also a large business in cutting out and making up garments from proofed cloth. The solution is largely sold in collapsible tubes, which of the ordinary size of 3 inches by 1 inch sell at 2*s.* 9*d.* per dozen. It hardly needs to be said that the material is largely used by cyclists, though a good demand is experienced from the electrical industry.

SHORT MENTION.

MR. J. W. O. WALKER, who has been for some years manager at Messrs. George McLellan & Co.'s rubber works at Glasgow, has resigned that position and is, I understand, taking up a post with the Dunlop Rubber Co., at Birmingham. Mr. Walker was for some years head of a department at Messrs. Charles Macintosh & Co.'s works.——The Clarendon Rubber Co. is the title of a new rubber firm started at the Ragland street works, Hyde, near Manchester, under the management of Mr. Redfern.

RUBBER IN THE UPPER NILE REGION.

THE Earl of Cromer, British agent and consul in Egypt, in a recent report to the Foreign office, states that considerable quantities of rubber trees are reported in many of the districts of the province of Bahr-el-Ghazal. The director of woods and forests had been despatched to report on the possibilities of reöpening the rubber trade of Bahr-el-Ghazal, which, prior to the uprising of the Mahdists, had begun to attain importance. It is known that the late General Gordon, who lost his life in that region, had the hope that a great commerce could be built up there, based primarily upon India-rubber, and the late Emin Pasha left in his notes references of interest to the same subject. It is also hoped, in the near future, to develop the rubber forests in southwestern Kordofan, which, from all accounts, are of great importance. Kordofan is an Egyptian province immediately west of Abyssinia, and in the same latitude as the German Kamerun, a rubber producing district on the west coast of Africa. Another article in this paper, by the way, relates to rubber in German Africa.

THE BLOOMING OF RED RUBBER GOODS.*

IN the manufacture of red rubber goods it is particularly desirable, besides possessing the other qualities required in rubber products, that they shall be free from liability to "bloom." The blooming of rubber goods is most annoying to the manufacturer; it cannot be foreseen, but appears generally only after the goods have gone into consumption, and yet he has to suffer the consequences—inconvenient disputes with the customer and, usually, the return of the goods. No one desires red rubber goods with a whitish tinge, and in many instances they are entirely useless. It is natural, therefore, that rubber chemists should have devoted their energies to this subject, and various explanations as to the causes of blooming have appeared.

If we consider, in the first place, what this bloom consists of, we shall find that it is not produced exclusively by the sulphur of vulcanization, though this may be the cause in a majority of cases. In the bloomed out mass, which generally is crystalline, and often dusty and mealy, other substances besides sulphur are found, such as the carbonates of zinc, calcium, and magnesium, and also resins and oils, even if, as a rule, they exist in small percentages only. Of course the bloom does not appear on red rubber goods alone, but also on goods made of white and grey compounds. This defect on the last two named is not so apparent, and is objected to only when the appearance is too pronounced; while in black goods—it is immaterial whether carbons or lead compounds have been used—it is rarely found. The existence of antimonoxids in the bloom, as is often supposed, must be excluded, because they could be traced only to the golden sulphurets, which would produce a decomposition during vulcanization, causing the rubber to turn brown or black.

Pure sulphur bloom appears only on goods in which sulphur is used in connection with rubber which is free from resin; that is, the best grades of rubber. But in the use of inferior rubber, containing a considerable percentage of resins, generally small portions of these are segregated and sweated out in vulcanization. This is even more true of the solid greases which form part of some of the substitutes used in rubber mixtures. On giving close attention to the appearance of the bloom on rubber goods, we find that it returns persistently, even after having been removed with carbon disulphid or other solvents, or even after being ground off. If the latter process be resorted to, it must not be done too deep, because of the singular fact that rubber goods blooming on the exterior do not show that condition below the surface. When cut with a knife the cut surface will remain clean.

As already mentioned, the bloom caused by sulphur (and also paraffin) is crystalline in its composition; it looks exactly as if rubber had been treated to a coat of solution of sulphur in carbon disulphid and the latter had evaporated. The bloom, therefore, would appear to be nothing more than the segregation of sulphur from any solution—for instance, resin existing in rubber and made fluid by the heat of vulcanization. This theory virtually is admitted by those scientists whose explanation of blooming is that it is caused by faulty methods of vulcanization, by which the sulphur is set free.

This explanation would be plausible enough did it suffice for all the concurrent features. Not only is the segregation of sulphur wholly external, recurring repeatedly after removal, but it is most prevalent in soft elastic rubbers—the best grades—decreasing proportionately with the inferiority and hardness of the rubber, which then contains a larger percentage of rubber and might easily be overloaded with it. Blooming never occurs in hard rubber (vulcanite). Further, rubber blooms only when exposed to the air, and not in water or other fluids, or in water containing superoxid of hydrogen, which certainly would cause blooming if oxidation played any part in it. It manifests itself alike under high and low temperatures; what degree enhances or retards it has not been established. The chemical actions and causes producing bloom are still a doubtful quantity, and the most that can be done is to take particular notice of all the various changes and thus try to overcome the objectionable feature.

The methods to this end vary in the case of different observers. Naturally vulcanization receives first attention, since in that process many have been led to believe that the key to the situation is to be found. We are convinced that the heating of rubber to a high temperature is the primary cause of blooming, but under what condition it occurs has not yet, in spite of the most minute observation and registering, been determined. It has been pointed out repeatedly in the technical press that correct proportions of sulphur and golden sulphuret would prevent blooming, but what the particular proportion is, or how it is to be ascertained and on what fundamental principle, remains to be stated. Every rubber expert, after having established to his own satisfaction a fixed theory to overcome this defect, suddenly discovers that his red rubber blooms, and he has to keep on experimenting.

Next, attention is given to the golden sulphuret, and its composition and influence on red rubber, and many experiments in practice and theory have been made in this connection. The easy decomposition of many brands of golden sulphuret has been thought to have an importance bearing upon the matter. It is pointed out that the sulphurets, treated with carbon disulphid, which was intended to dissolve the free sulphur only, often dissolve the chemically bound sulphur, and change into the compound Sb_2S_4. This decomposition does not take place in all golden sulphurets, and by the use of an article free from this condition, blooming, so far as it may be attributed to the sulphurets, may be prevented. The golden sulphur of antimony is then tested by extraction by means of carbon disulphid in a reflux cooler, at which operation no more than about 4 or 5 per cent. of sulphur should be extracted. This naturally only refers to so-called chemically pure golden sulphurets. Sulphurets containing a larger proportion of free sulphur, will show an increased loss in weight, for which reason, in order to obtain accurate results, the antimony must also be considered.

The theory is often stated that the bloom on rubber consists partly of antimonoxid. This is impossible, for if antimonoxids are present in noticeable quantities, or should form during vulcanization, the partial or total decomposition into black antimontrisulphid would be inevitable; the color of the rubber would then become, instead of bright red, a red brown or brown to black.

It is possible for free sulphur to segregate in crystalline form, from oils and resins, as well as from gold sulphurets. Here also vulcanization is without any material influence, the amalgamation of these substances occurring at higher temper-

* Translated from the *Gummi-Zeitung* (Dresden).

atures then those of vulcanization. The fault lies then in the production of the oil substitutes, or is caused by the presence of resin in the crude rubber; the temperature of vulcanization is sufficient to dissolve the sulphur. Especially dangerous in this connection are the substitutes containing a high percentage of mineral oils and mineral greases, which in themselves do not compound with sulphur and always contain a large amount of physically free sulphur. Red (and other) rubber goods containing a large percentage of such substitutes bloom most readily, and it is hard to explain why the articles of French manufacture, which contain at least 40 per cent. of such mineral greases, are so much preferred. Besides sulphur, the solid mineral greases, paraffin and ceresin, segregate from them, and rubber goods, especially of Pará qualities, are often seen the bloom on which consists largely of paraffin. The other concurrent inorganic compounds are represented in the matter of blooming in a small degree, and are perhaps only accidental admixtures of sulphur which were taken up by it in the compound.

The measures, therefore, to prevent the blooming of rubber goods, and red rubber goods especially, would appear to be as follows:

1. The use of suitable gold sulphurets.
2. The greatest possible limitation of substitutes, and the avoiding of those having a high degree of mineral greases.
3. The storing of rubber in moist air.
4. The use of crude rubber free from resins.

To remove thoroughly the bloom where it has appeared, the only remedy is to grind off the surface slightly, which perhaps is possible only in few instances.

THE NEW GUTTA-PERCHA.

[FROM "THE ELECTRICAL REVIEW," LONDON, JULY 18.]

FOR the last 20 years or more innumerable efforts have been made to produce artificial Gutta-percha, but in the words of one who has perhaps had more to do with Gutta-percha substitutes than any other person, every attempt has been foredoomed to failure, and the reason is not far to seek. The chemical analysis of Gutta-percha shows it to be composed of about 60 per cent. of India-rubber* and 35 per cent. of resin and a small proportion of impurities. At first sight it would appear a comparatively simple matter to arrange to mix India-rubber and resin so that finally the proportions should be as above. An insurmountable difficulty, however, exists in the fact that at a comparatively low temperature, the resinous mass becomes fluid, so that long before a temperature is reached at which India-rubber could combine with resin, the latter has been reduced to a thin fluid, and the act of combination thereby rendered imperfect, if not impossible. In the result a Gutta-percha substitute is soft and readily takes the impression of the nail, and at a temperature little above normal becomes sticky. On being raised to the temperature of boiling water it soon becomes soft, but does not usually on cooling return to its original condition, and remains more or less sticky and plastic. About ten years ago a German chemist set to work to produce Gutta-percha synthetically, and after numberless experiments and most exhaustive testing of their results, he produced a material which is stated by several high scientific authorities to possess properties which in no case are inferior to those possessed by natural Gutta-percha, but that are in some directions even superior.

The new Gutta-percha has been under the observation of the German postoffice officials for several years, and the manner in which this material has endured the tests to which it has been subjected—both in their official testing laboratory and also at the works of Messrs. Felten & Guilleaume—has justified them in commencing its adoption for the insulation of submarine and subaqueous wires and cables to be used on their telegraph and telephone systems.

These statements are confirmed in an official certificate issued by the imperial postoffice.

Reports upon this material made by Prof. Weber, of the Zurich Polytechnic, Mr. Ed. C. de Segundo, A. M. I. C. E., and other authorities set forth the following facts:

1. That the new Gutta-percha is fully equal to natural Gutta-percha, and, in fact, possesses some characteristics which render it even superior to natural Gutta-percha.
2. That it does not soften until a higher temperature is reached than in the case of natural Gutta-percha.
3. That its electrical resistance is somewhat higher than that of pure Gutta-percha.
4. That the inductive capacity is practically the same as that of natural Gutta-percha, perhaps a little less.
5. That all the ingredients used in its manufacture are readily obtainable in most countries, and that there is little likelihood of the prices of any of the ingredients tending to rise.
6. That no natural Gutta-percha whatsoever is used in the manufacture.
7. That the price at which it can be produced in this country in a quality equal to that of natural Gutta-percha for the insulation of submarine cables is less than one-half the present price of Gutta-percha.

We have examined samples of this material, and while, of course, we have not had an opportunity of subjecting it to the elaborate tests which would be necessary to enable us to express our own opinion upon such properties, for instance, as the inductive capacity, we can only say that as far as our observations go, it is very greatly in advance of any Gutta-percha substitute that has hitherto been placed upon the market. From the point of view of submarine telegraphy, the constancy of the electrical resistance and of the inductive capacity is, of course, a condition *sine quâ non* to the use of this material in the place of natural Gutta-percha. We are, however, assured that some submarine and subaqueous cables have already been made on the Continent, the cores of which are insulated with the new Gutta-percha, and that these cables have been in use for over a year, and have yielded results as regards both electrical resistance and inductive capacity that are absolutely satisfactory. Apart from the question of the use of this material for the insulation of submarine cores, the low price at which it can be produced, coupled with the excellence of its physical and electrical characteristics, should open up a wide field for its use in many industries, and we shall look forward with interest to its development in this country. The German and other European patents have already been acquired, and a company has been formed to deal with the British and Colonial patents. This company has been privately subscribed and no issue will be made to the public. We hope at an early date to have an opportunity of going further into this interesting invention and to be able to publish the results of various tests.

A RUBBER planting company desires to be informed, through THE INDIA RUBBER WORLD, where a supply of Pará rubber tree seeds may be obtained, with a view to making an experimental planting of the same in Oaxaca, Mexico.

*Our contemporary here singularly permits a slip of the pen in confounding *gutta*—a constituent of Gutta-percha—with India-rubber.—THE EDITOR.

AFFAIRS IN THE AMAZON RUBBER COMPANY.

THE situation in respect to the Bolivian concession of the Acre district to an American syndicate apparently remains unchanged. The matter was referred to by the Bolivian president in his message to Congress, on the opening of the session at La Paz, on August 10. He declared that the protests of Brazil were without basis, and that his government were in the right, and intimated that there was yet time enough for the organization of the projected company to give effect to the concession. A writer in the London *Morning Post* says that it is untrue, as reported from Washington, that Brazil has threatened to break off diplomatic relations with Bolivia, and equally untrue, as published in Washington, that Bolivia has promised to revoke the concession. He quotes facts to show that Brazil, in the past, has definitely acknowledged the Acre district to belong to Bolivia, and says, "it is difficult to think otherwise than that Brazil is wilfully and wantonly obstructing a useful enterprise projected by a friendly state." The absence in Europe of the gentlemen most intimately concerned in the affairs of the Bolivian Syndicate prevents THE INDIA RUBBER WORLD at this time from presenting any statement of the situation from their standpoint.

* * *

OUR Manáos correspondent writes: "The Acre business is getting very much mixed. The Amazonas state government took it upon itself to consider the Acre as Brazilian territory and levied an export duty on rubber shipped from there via Manáos. As the rubber gatherers had already paid 15 per cent. *ad valorem* to Bolivia, they thought it extremely hard to have to pay another 20 per cent. at Manáos, and they have protested. The federal government says nothing, but their custom house still permits foreign goods to go through to the Acre without paying duties to Brazil, and this country has not recalled its consul from Puerto Acre, so that the federal authorities evidently regard the Acre as belonging to Bolivia." Recently a state gunboat went in pursuit of a launch which had left Manáos for the Acre, said to be loaded with Mauser rifles for Bolivians, though no rifles were found. There were two federal gunboats at Manáos at the time, but they took no notice of the matter.——Later, the *Brazilian Review* reports the recall of the Brazilian consul at Puerto Acre (called also Puerto Alonzo.)

* * *

THE Amazon river cable between Pará and Manáos continues to work very unsatisfactorily. A Manáos correspondent of THE INDIA RUBBER WORLD mentions a recent interruption to communication which lasted from June 25 to July 10 with a consequent paralysis to trade. "Some of the merchants here," he writes, "think seriously of asking for government assistance to build a land telegraph line from Manáos to Georgetown (Demerara). If carried out, this plan would effectually solve the cable question, as land lines are not liable to the interminable interruptions which make the river line a delusion and a snare. Considering the high rate charged by the Amazon Telegraph Co. for messages—50 cents a word—there can be no doubt that a land line would pay its way, and it would be by no means a bad investment if some millionaire interested in rubber were to build it."

Writing in *The Electrical World* (New York), Charles S. Seibert says: "A cable ship, the *Viking*, of about 3000 tons, is constantly moving up and down the river, with a trained corps of engineers aboard, proceeding instantly to the scene of a located or expected trouble; but in spite of this the cable is sometimes interrupted for twenty days at a time. The strong river current, the shifting bed, immense water logged tree trunks rolling along the bed of the river, and ships' anchors all combine to break the cable, and a land line through the impenetrable forest is a gigantic task. This, however, is being slowly constructed, and is put to good use when a break in the submarine line occurs, steam launches piecing out the parts of the route which the lines do not cover."

* * *

A REPORT from a South American source indicating that the state of Amazonas had succeeded in making a loan in New York appeared in the last issue of this paper. Evidently it was not well founded, since the governor of that state, on the convening of the present congress at Manáos, made further recommendations in regard to improving the public finances, and a bill was introduced for a thirty year loan of £1,500,000 for the redemption of the present currency debt and for taking over the electric lighting plant, street railway, and water works. A sinking fund is to be created by the deposit monthly of 10 per cent. of all duties collected, and matured coupons of the new bonds will be received in payment of dues to the state. It is reported that the government, displeased with the comments of one Manáos newspaper on the recent failure to negotiate a loan in New York, persuaded a creditor to proceed against its owners, and the press and types were sold at auction.

* * *

IN a recent report, the United States consul general at Rio de Janeiro, Mr. Eugene Seeger, refers to the unfavorable sanitary conditions of certain districts as a drawback to the opening up of a large and rich section of South America to the commerce of the world. The sanitary conditions of the Amazon throughout Brazil and of the Madeira up to the falls he describes as being about the same as those of the lower Mississippi in the United States during the summer season. The conditions in the highlands of Bolivia and Peru are very favorable. Continuing, Mr. Seeger reports:

"The unhealthy region of that territory is in the vicinity of the falls of the Madeira and Béni and on the lower Purús and Acre, where numerous basins exist which, during the rainy season, are filled with water. This water has no outlet, and, exposed to the rays of the tropical sun, soon becomes stagnant and breeds the microbes of malaria and *beriberi* and swarms of mosquitos, which introduce them into the human system.

"The mortality among the rubber cutters of this region is enormous; but it must be taken into consideration that the majority of these people come from the regions of Ceará and Maranhão, have very low vitality, are irregular in habits, profoundly ignorant, and too poor to fortify themselves against the climatic dangers to which they are exposed. Those who control labor on a large scale in the lowlands of Brazil and Bolivia could greatly reduce the mortality of their men by complying with the following requirements: To provide for a good commissary department, comprising, among other things, plenty of preserved vegetables, tea or yerba mate (Paraguayan tea); to furnish the men with good tents, mosquito bars, and protection of hands and head against mosquito bites; to let

nobody sleep lower than 30 feet from the ground; to provide water boilers and filters, and, in particularly exposed localities, to give the men quinine and tincture of arsenic; to permit the use of spirituous liquors only in exceptional cases; to have a good physician along and enforce the strictest discipline. If these hygienic measures were observed in the rubber camps, on board of the river steamers, and during the construction of railroads and canals in swampy regions of the tropics, many lives could annually be saved.

"The foregoing, however, was not written to recommend the exploration of the tropical swamps of Brazil or Bolivia, but to call attention to the facility with which the great and rich territories of eastern Bolivia and eastern Peru can be opened up to the commerce of the world."

* * *

OUR correspondent at Manáos reports that the state government has leased the *trapiche 15 de Novembro*—a pier where ships are loaded and unloaded, and the only one from which dutiable goods (including crude rubber) may be shipped—for sixty years, to a syndicate who propose to make certain harbor improvements. This is the arrangement referred to by the consul at Pará, in a report quoted in this issue.

* * *

The thirtieth annual meeting of shareholders of the Amazon Steam Navigation Co., Limited, was to be held in London on June 16, at which time the accounts for the year ending December 31, 1901, were to be presented with a recommendation by the directors that the earnings justified a dividend of 3 per cent. in addition to 2 per cent. already paid, making 5 per cent. for the year. The dividend last year was only 4 per cent.

* * *

THE INDIA RUBBER WORLD has particulars with regard to India-rubber lands for sale in Peru, situated on the rivers Tapiche and Blanco, which unite and flow into the Ucayali, the lands being within two days steam of Iquitos. About 500 *estradas* have been opened up along the rivers. The owners are prepared to give title to 52,370 hectares [=129,406 acres] of land. The presence of rubber in the district referred to long has been known, in a way, but its remoteness tended to discourage investments there. Now, however, that better transportation facilities exist, much development may be expected soon in Peru.

A NEW SCHOOL OF LITERATURE.

TO THE EDITOR OF THE INDIA RUBBER WORLD: An unforseen benefit which has resulted from the establishment of rubber plantations in Mexico doubtless to some minds would justify these undertakings, even in the event of failure to realize anything on rubber. Meaning the minds of several gentlemen, who, chosen to visit the plantations in a representative capacity, have returned home to find themselves transformed into authors. Their little books of travel are complete guides to those who would visit Mexico later, dotted with amusing incidents, and embellished with descriptions of forest and stream, flowers and birds and sunshine—until the reader, looking for information about his rubber trees, is charmed into forgetfulness of everything but the literary charm of the "inspectors' report."

It must be in the climate. Which suggests that some home-stayers who are striving in vain to get into print might become even *litterateurs* through a course of rubber plantation inspection. As for the man with money invested in planting who wants to know how his rubber trees are growing—well, a trip to Mexico doesn't cost much nowadays. C. ELASTICA.

July 19, 1902.

RUBBER YIELD OF GERMAN AFRICA.

THE official reports on the German colonies in Africa devote special attention to the development of their India-rubber resources, though the results in this direction have not yet proved so successful as was at one time anticipated. For one reason, as a recent report on Kamerun expresses it: "In consequence of the falling off of the supply of rubber and ivory in those parts of the country from which they have hitherto been obtained, it is only by the opening up of fresh districts that the trade can be kept up to its present standard." Still rubber and ivory continue to furnish the larger part of the exports from Kamerun, Togo, and German East Africa, and now and then, for a while, an increased yield is obtained. Meanwhile the government is seeking to encourage the forming of rubber plantations, as well as to discourage the destruction of native rubber plants. According to a British report on recent trade in these German colonies, the value of the rubber exports was as follows:

Kamerun—£94,893 in 1899-1900; £102,926 in 1900-1901—the increase being due to higher prices realized.

Togo—£18,304 in 1899-1900; £26,068 in 1900-1901—more rubber having been gathered.

East Africa—£66,859 in 1899; £52,933 in 1900—exports having declined in volume.

From various sources the following statement has been compiled for THE INDIA RUBBER WORLD of the outturn of rubber from the colonies named, during the past ten years, though a few blanks remain to be filled:

KAMERUN.			EAST AFRICA.		
YEARS.	Pounds.	Value (Marks).	YEARS.	Pounds.	Value.
1891-92...	710,600	1,024,000	1891.....	521,000	$240,000
1892-93...	910,800	1,427,000	1892.....	686,000	282,000
1893-94...	880,000	1,304,000	1893.....	500,000	233,000
1894-95...	752,660		1894	415,000	247,000
1895-96...	707,340	1,090,728	1895.....		321,000
1896-97...	670,721	829,559	1896.....		
1897-98...	969,738	1,177,715	1897.....	619,264 rup.	851,298
1898-99...	1,328,536	1,928,080	1898.....	418,636 "	702,978
1899-00...	1,163,025	1,930,264	1899.....	599,740 "	951,947
1900-01...	1,203,400	2,095,665	1900 (6 mos.)	181,636 "	324,686

TOGOLAND.

YEARS.	Pounds.	YEARS.	Pounds.	YEARS.	Pounds.
1892.....81,400		1895-96...	..204,168	1898-99.....	.389,530
1893.....63,800		1896-97.....		1899-1900...	217,560
1894 68,200		1897-98.....	.194,918	1900-01.....	.140,116

From these figures it would appear that the average production of India-rubber in German Africa during the five years covered by the latest available statistics has been 1,757,414 pounds.

The imports of crude rubber into Germany from her African colonies, during five years past, have been:

YEARS.	Togo & Kamerun.	East Africa.	Total.
1897.... ....*pounds*	744,700	167,200	911,900
1898.....	698,280	70,180	768,460
1899..... ....1,111.800		140,800	1,252,600
1900.....	902,000	100,980	1,002,980
1901.....	847,800	120,340	968,140

The yearly average deduced from this table is 980,816 pounds, indicating that the mother country fails to profit from the handling of an important share of the rubber produced in her colonies.——During the same five years Great Britain imported rubber direct from Togo and Kamerun as follows:

	1897.	1898.	1899.	1900.	1901.
Pounds 152,208		177,632	156,688	146,944	147,728

In addition to the various native rubber species in German Africa, several imported species promise good results, and the experiments made in planting, under expert scientific supervision, seem likely to be of benefit to the cause of rubber culture generally.

THE ENGLISH MACINTOSH.

THE macintosh without the *k* is an English invention pure and simple, and has not only had a marvelous growth in Great Britian, but that country is headquarters of the world for that trade as far as output goes. This is not altogether due to the prejudice of the Briton in favor of this garment, but is in part accounted for by a climate which, more than any other, demands such wearing apparel. It is interesting to know that the first patent for waterproofing on wearing apparel was granted to an Englishman, John Jasper Wolfen, as far back as 1627. The patent specification in part reads as follows:

"To vse or excise, practize or putt in vse," "a newe invencon for the making and pparing of ctaine stuff to hould out wett and rayne;" and to "make, frame, sett vpp, or vse all such engynes, instrumentes, and deuises" as the patentee shall have found out or discovered, "to pposes aforesaide," on payment of the "yerely rente of five poundes of lawfull money of Englande."

The inventor did not contemplate the use of India-rubber as far as we know, but among the "engynes," "instrumentes," and "deuises" who can say that there may not have been spreaders, doubling machines, and even heaters? We do know, however, that in 1791 Samuel Peal was granted a patent for the use of India-rubber dissolved in spirits of turpentine for waterproofing purposes, and in 1823 Charles Macintosh made a further advance in proofing fabrics with India-rubber dissolved in coal oil. He also patented a doubling machine at that time, and erected a dry heater, perhaps the first that was used in the rubber business. Later, when Thomas Hancock discovered that sulphur added to rubber and subjected to heat brought about a "change," the macintosh garment really had its birth. The early product was very unsightly and heavy, due partly to the machinery used, to the fabrics employed, and to the extremely heavy coatings of rubber, but when the "English spreader" was perfected, proofing for the trade became general, and tailormade garments were produced, very handsome effects were reached. In connection with the macintosh it is interesting to know that the "electric finished" gossamer had its birth in England, and a great variety of designs in farina printed upon rubber were the result. The gossamer, to be sure, did not have the run in Great Britain that it did in the United States, the printed designs as a rule appearing on the linings of single textures.

Another specialty of English parentage was the vapor cure for double texture which was, for some reason, due either to the skill of the manufacturers or to their climate, very successful in England, but in the United States a general failure, resulting in loss to many large houses. So disastrous was it, indeed, that almost every manufacturer in the States discontinued the process and took pains to advertise that their goods were all steam cured. It would hardly be giving a fair look at the British waterproofing trade if one did not call attention to the rainproof goods known as Cravenette, that had their birthplace in Bradford, England, and from there have gone out all over the world. They have not taken the place of the macintosh, but have created a place of their own, and without doubt have come to stay. The illustrations accompanying this article show typical styles of English garments of the present day. They are, of course, only four out of many types of products of several large houses.

IN what is known as the "scientific war on mosquitoes" the use of rubber goods has proved itself a necessity. For example, the department of public health of the borough of Queens, Long Island, after condemning some 2000 small ponds, were obliged to equip their men with rubber hip boots and lengths of rubber hose before they could cover the water with a film of crude oil, which kills the larvæ of the mosquito.

THE production of rubber [says the New York *Journal of Commerce*], is scattered over so wide an area that its control would be much more difficult than that of petroleum or anthracite; it would more nearly resemble the control of refined sugar production. Here only partial success has attended the efforts to put the production under a single control.

"ALEXANDRA" COAT.
[Fergusen, Shiers & Co., Manchester.]

MOTOR COAT.
[Abbott, Anderson & Abbott, London.]

OFFICERS' REGULATION COAT.
[Leyland and Birmingham Rubber Co., Limited.]

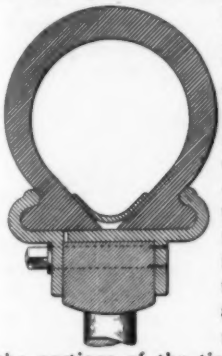
"MABEL" COAT.
[F. Frankenstein & Sons, Manchester.]

NEW STYLES IN ENGLISH MACINTOSHES.

NEW GOODS AND SPECIALTIES IN RUBBER.

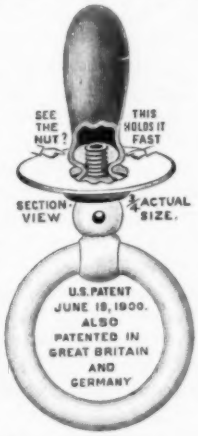
IMPROVEMENT IN "CLINCHER" TIRES.

THE object of the recently patented improvement in "clincher" tires illustrated herewith is to provide a means for firmly and securely holding such tires to the wheel rims continuously throughout their lengths. The tire is of the ordinary clincher form, open at the bottom or inner portion and having the usual bead like ribs at the sides. The wheel rim is channeled, and formed to fit over and closely embrace the inner portion of the tire, the curved over edges extending up over said ribs. The main portion of the steel channel is stationary, while the other side is detachable, and held in place by bolts or screws. By taking out the bolts the tire may easily and quickly be removed for purposes of repair or renewal. Within the edges of the tire, bearing upon the inner surfaces of its smaller side and between the ribs, is a band of metal which serves as a support for the portions of the tire which lie within the rim channel. Hence, as the detachable part of the rim is driven inwardly, the result is to clamp the tire firmly between the rim and said band. Thus the tire is held by a strong mechanical clamp, and does not depend for adhesion to the rim upon either elasticity or friction due to inflation of the tire. The patent, issued to George A. Weidely, is assigned to the G & J Tire Co., Indianapolis, Indiana.



THE "ANTI-CHOKE" COMFORTER.

THE illustration herewith gives an insight into the method of construction of the "Anti-Choke" baby comforter. One advantage which it possesses is the impossibility of its being pulled apart, thus avoiding the liability of the rubber part choking the child, as might happen with some other "comforters." The cut shown is ¼ the actual size of the article, which is made of good materials and put up on attractive cards of one dozen, to retail at 10 cents each. [William L. Strauss & Co., No. 27 Warren street, New York.]


SEE THE NUT?
THIS HOLDS IT FAST
SECTION VIEW
¼ ACTUAL SIZE.
U.S. PATENT JUNE 19, 1900. ALSO PATENTED IN GREAT BRITAIN AND GERMANY

THE "LENOX" ICE BAG.

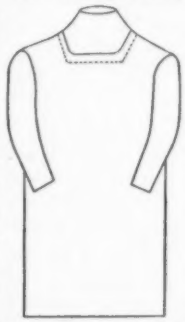
THIS is a new patented article which has been placed on the market recently by a firm who make a specialty of producing improved articles for use in the sick room and hospital. The strong points of this improved ice bag are: First, it has two perforated lugs, as shown in the cut, by means of which it may readily be secured to the patient; second, it is provided with a handsome aluminum screw cap; third, it has no creases or folds, as have most of the ice bags heretofore in use, thereby making it more durable and more sanitary. It is a handsome, light, and desirable ice bag, and it is stated that it has been adopted by some of the largest hospitals, which shows that it has merit. The largest sale, of course, is secured through the druggists. An unusually broad and protective patent on this article has been granted to Meinecke & Co. (Nos. 48-50 Park place, New York), who protect all their patents through the Patent Title and Guarantee Co. Although the patent claims as allowed are brief, they are clear and fully cover the lugs, regardless of their shape.

BAILEY'S FOOTHOLD.

THIS cut relates to a "foothold" of special design which is covered by one of the sixty or more patents for rubber novelties that have been granted to C. J. Bailey, the Boston rubber man. Somebody has said: "The woman who wears French heels can't get an ordinary rubber to fit 'em. She *has* to wear footholds and make the best of them." This seems to have given Mr. Bailey an idea. The result is that he has brought out a foothold with a rubber tube in the shank which makes an air tight waterproof dam against anything in the shape of moisture. [C. J. Bailey & Co., No. 22 Boylston street, Boston, Massachusetts].

A NEW WATERPROOF COAT.

THE drawing herewith illustrates a new design in waterproof coats for which a United States patent has been issued to Gustave and Albert Ström, of Paris, France. The object of the invention is a waterproof coat having a large, thin, and flexible collar of India-rubber intended to be enlarged by the hands and passed over the head to fit closely to the shape of the neck, while the coat itself has no opening on the forepart and is passed over the head at the same time as the flexible collar. Such coats are intended particularly for persons whose occupations require them to remain for hours in the rain—sailors, military officers, sportsmen, postmen, grooms, coachmen, chauffeurs, and the like. The drawing represents a front view of the coat, which consists of two parts—the main garment and the elastic collar.



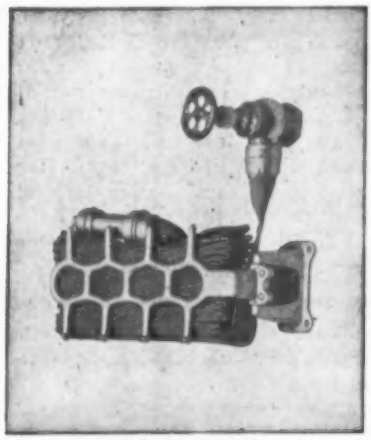
THE NEW "REFORM" COMB.

COARSE toothed hard rubber combs with the so-called "molded" teeth have been on the market for some time, but the process has now been applied to fine teeth as well, and the illustration relates to a comb of this style. Teeth constructed in the pyramid form make them stronger at the base, where the greatest strain comes, thereby rendering the comb more durable. This form is not given to the teeth, in fact, by molding, but by grooving the spaces, which does away with the

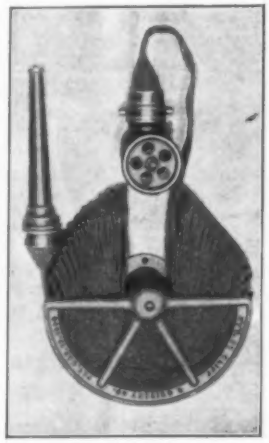
sharp edges appearing at the base between the teeth in the old style comb. Every tooth being carefully rounded, there are no sharp edges either on the teeth or at the base to cut or break the hair; besides, the comb is more easily cleaned. This comb is called the "Reform," which name has been registered as a trade mark, and is made in the newest and most attractive patterns. [Harburg Rubber Co.—Schrader & Ehlers, agents, No. 335 Broadway, New York.]

TWO NEW FIRE HOSE RACKS.

IN the first of the two illustrations shown under this heading a view is given of a swinging hose rack, for interior fire protection equipment, which has several advantages worth mentioning. In the first place, it is so constructed that there is no support under the points of folding the hose. The result is to prolong the durability of the hose. It has fewer and stronger parts than other hose racks; it is ornamental in appearance, has great sustaining strength, and occupies a minimum of space. This swinging hose rack is made in twelve sizes, the smallest being



SWINGING HOSE RACK.
Showing Rack Attached to Wall.



SADDLE RACK.
Showing Rack Attached to Wall.

designed to hold 25 feet of 1½ inch unlined linen hose, and the largest 100 feet of 2½ inch hose. These racks are finished with aluminum or any color enamel.——The second cut represents a saddle rack in the position which it takes when attached to a wall. These racks are made in various sizes with capacity for holding, in reasonable length folds, any quantity of unlined linen hose not exceeding 200 feet. The hubs for these racks are made in three widths adapted respectively for 1½, 2, or 2½ inch hose. Both these styles are sold by the Eureka Fire Hose Co., No. 13 Barclay street, New York.

PLANTING MONEY INSTEAD OF RUBBER.

INVESTORS in the "get-rich-quick" Pacific Rubber Co. have ceased to get circulars relative to its affairs from the United Securities Co., No. 66 Broadway, New York. Instead, they have been hearing from George T. Hart & Co., "investment bankers," of New Haven, Connecticut, who state that they have been appointed "fiscal agents," and that there is a "movement to consolidate the Pacific Rubber Co., under a new plan to be proposed by us." But dividends do not come from Hart & Co. any more freely than they have from the Broadway concern since March 5 last. A purchaser of these rubber planting shares who called at Hart & Co.'s office was told: "No law can make us pay dividends if we don't want to," and that is probably the end of the matter. Under date of July 23 Hart & Co. wrote to the stockholders inviting them to send in their shares, as they "have parties that would be interested in buying it," but some of the stockholders, at least, are unwilling to surrender their certificates without a more definite consideration.

THE INDIA RUBBER WORLD has received several communications from stockholders—one list contained the names of eleven persons who had invested $1975—asking what steps can be taken to recover their money. If they could gather in a body and find the men who have the money in possession, they might take it away by means of physical force; there is no other means that can be suggested just now. The "Pacific Rubber Co." crowd doubtless have been planting this money beyond the reach of legal proceedings, instead of planting rubber in Mexico.

NEW TRADE PUBLICATIONS.

THE EUREKA FIRE HOSE CO. (New York) have issued a new catalogue, describing in detail the characteristics of their various brands of circular seamless woven multiple fire and mill hose, of which fifteen are illustrated by "half tone" views which give a satisfactory idea of the construction and appearance of the goods. Specifications are given in each case, together with prices. Several brands of garden hose and of marline jacketed air drill and other hose are also described and illustrated. The list concludes with hose racks, hose reels, nozzles, and other like appliances. [5¼" × 6¾" 32 pages.]——An accompanying pamphlet is devoted to a historical sketch of the Eureka Fire Hose Co. and of the development of their special processes of hose weaving, with views from photographs of the interiors of the various departments of their factory. It contains also illustrations showing the details of construction of the different brands of hose. [5¼" × 6¾". 61 pages.]——Both these pamphlets have been printed with exceptionally good taste, rendering them attractive in appearance as well as interesting as reading matter.

FIRESTONE TIRE AND RUBBER CO. (Akron, Ohio) issue an illustrated pamphlet [4"×7½". 16 pages] describing their "side wire" solid rubber tires for vehicles and automobiles, and a folder giving prices. The distinctive feature of this tire is a series of cross bars every ¼ inch of its length, vulcanized in the rubber, which serve to retain the tire in place, with the aid of wires at the outer edges of the channel, resting upon the shoulder formed by these wires. The company write: "You will find the claims in our catalogue very broad, but the tire in service has proven all that we claim for it, and our trade is increasing very fast. This is especially true on heavy carriages or automobiles, where the strain is more severe on the defective construction."

INTERNATIONAL A & V TIRE CO. (New York) issue a new edition of their catalogue of Pneumatic, Solid Rubber, and Cushion Tires, for vehicles of every class. They are now making wired-on solid vehicle tires, in addition to the lines formerly produced by them. The catalogue contains a view of the factory at Milltown, New Jersey, in which their work has now become concentrated. [3¼"×6¼". 16 pages.]

THE OHIO RUBBER CO. (Cleveland, Ohio) are issuing some handsome catalogues devoted to the various lines of goods they carry in stock, one of the latest of which is labelled "Storm Proof Clothing," for the season of 1902-03. It illustrates the latest styles in mackintoshes and includes a full list of rubber surface clothing and specialties. [4"×9". 16 pages

THE OBITUARY RECORD.

RICHARD R. WHITEHEAD.

RICHARD R. WHITEHEAD, president and treasurer of the Whitehead Brothers Rubber Co., (Trenton, New Jersey), and a pioneer of the rubber industry in that city, died at his home there on July 25. In his death the city lost one of its leading citizens and the rubber interest one of its successful workers.

Mr. Whitehead was born in Hatboro, Pennsylvania, December 24, 1824. He went to Trenton in 1845, where his father had established a woolen mill. This business was continued under the name of John Whitehead & Sons, and later as Whitehead Brothers, until the end of the civil war. In 1870, Messrs. Whitehead Brothers started the manufacture of mechanical rubber goods. This was the beginning of an industry that was destined to be very successful and rapidly grew into one of the chief enterprises of New Jersey's capital.

R. R. WHITEHEAD.

From the inception of the new concern the subject of this sketch was closely identified with the business and its prosperty was largely due to his efforts. The business continued to grow and on November 21, 1887, the Whitehead Brothers Rubber Co. was incorporated and purchased the interests of Whitehead Brothers.

James R. Whitehead was the first president of the new company and Richard R. Whitehead, its vice president and treasurer. The latter became president of the company, January 1, 1894, since which time he had held that position. The company will continue under the management of Howard C. Whitehead, who has been vice president, and Alfred C. Whitehead, secretary and manager.

In addition to showing marked ability in a managerial capacity, the deceased had no small mechanical genius, and perfected several improved processes in rubber manufacturing, which were put into successful operation in his mills. Mr. Whitehead was noted for the close attention which he gave to his business. He devoted his whole time to promoting the interests of his mills and, aside from owning stock in a local bank or two, had no outside business connection. Nor had he any political aspirations.

NICHOLAS WILLIAMSON, M. D.

DR. NICHOLAS WILLIAMSON, a prominent citizen of New Brunswick, New Jersey, and some time mayor of that town, who died on August 15, was connected with a family once largely interested in the India-rubber industry, and had himself been engaged in the business. The deceased was a son of Nicholas Williamson, whose father was a bank president in New York and once comptroller of the city. Nicholas Williamson, Sr., after having been a bank teller, was for two years, until early in 1853, secretary and treasurer of the Union India Rubber Co. (New York), being succeeded by Frederick M. Shepard. In that year he assisted Christopher Meyer and Martin A. Howell in organizing the Novelty Rubber Co. at New Brunswick, N. J., becoming treasurer and later president of the company, and dying in 1862. Nicholas, Jr., born in New York city in March, 1845, and removing with his family to New Jersey, had prepared for Rutgers College, but on account of the death of his father did not enter. Instead he accepted the position of secretary of the Novelty Rubber Co., where he remained several years, continuing his studies meanwhile. In 1871 he was graduated from the College of Physicians and Surgeons (New York) and entered upon the practice of medicine at New Brunswick. The Novelty Rubber Co., by the way, had a license under Nelson Goodyear's hard rubber patent to make buttons, canes, fancy boxes, and pipes. At one time hard rubber buttons were in great demand for ladies' dresses, and the profits of the company were phenomenal. Later the fashion changed, the hard rubber patent expired, and the company, after various changes, went out of business, selling their premises in February, 1886. Dr. Williamson took an active interest in the affairs of his town, serving several terms as an alderman and three terms (1895 97 to 1899 1901) as mayor. On the day of his funeral, August 18, flags were at half mast throughout the town. Dr. Williamson is survived by his second wife—who was Miss Gurley, of Troy, New York—a son, and three daughters; also by two brothers: Douw D. Williamson, of New Brunswick, and George N. Williamson, of Englewood, N. J.——A brother of Nicholas Williamson—Douw Ditmars Williamson—was interested in the rubber industry at New Brunswick and later at Edinburgh, Scotland, where he was the first manager of the North British Rubber Co., Limited.

* * *

LUTHER R. MARSH, who died recently at Middletown, New York, upwards of 80 years of age, had been one of the great lawyers of his day. He was at one time a partner of Daniel Webster. While it is not known that he ever was interested with Webster in India-rubber litigation, he had some rubber patent cases on his own account. Mr. Marsh was counsel for the North American Gutta Percha Co. of New York, founded in 1853, and was elected a director at the second annual meeting. This company, by the way, was succeeded by the present Gutta Percha and Rubber Manufacturing Co. THE INDIA RUBBER WORLD library contains a pamphlet by Mr. Marsh, in answer to one by William Judson, in a discussion over John Rider's Gutta-percha patent.

=Joseph Henry Converse, who died at his home in Cambridge, Massachusetts, August 2, in his eightieth year, was born in Boston, where he became a successful business man, particularly in connection with the development of street railways. He was also at one time president of two southwestern railway companies, and was interested in coal mining in Nova Scotia. He was for 27 years treasurer of Tremont Temple, in Boston, and aided in the development of various charitable institutions. He was a cousin of the Hon. Elisha S. Converse, and it is mentioned that when the elder brother of the latter—the late James W. Converse—went to Boston to make his start in life, his first employment was with his uncles, Joseph and Benjamin Converse, father and uncle, respectively, of Joseph Henry Converse.

HERBERT C. COMSTOCK has succeeded Silas L. Hazen as sales agent for The Victor Rubber Tire Co. (Springfield, Ohio), n charge of the company's New York branch, No. 1769 Broadway.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values for the fiscal year ended June 30, 1902, compared with the three fiscal years preceding—not including exports to Hawaii and Porto Rico:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
July-May..	$578,572	$981,058	$1,607,448	$3,167,078
June, 1902.	55,574	65,257	174,493	295,324
Total.	$634,146	$1,046,315	$1,781,941	$3,462,402
1900-01	565,726	724,015	1,727,527	3,017,268
1899-00	541,830	420,746	1,405,212	2,367,788
1898-99	(a)	260,886	1,504,499	1,765,385

(a) Included in "All other" prior to July 1, 1899.

The number of pairs of rubber footwear exported during the past twelve fiscal years has increased as follows:

1890 91 ...175,627	1894 95....383,723	1898 99.... 486,586
1891-92....231,105	1895-96....350,713	1899-00.... 762,016
1892 93....410,950	1896-97....306,026	1900-01 ...1,469,100
1893-94....261,657	1897-98....391,832	1901 02....2,594,688

The average invoice value of rubber footwear exported during the last five fiscal years has been:

1897-98.	1898-99.	1899-1900.	1900-01.	1901-02.
57.3 cents.	53.6 cents.	55.25 cents.	49.3 cents.	40.3 cents.

RUBBER GOODS EXPORTED TO THE ISLANDS.

	1900-01.	1901-02.
To Cuba	$87,427	$134,846
" Porto Rico	10,263	19,606
" Philippines	17,369	58,606
Total	$115,059	$213,058

No returns are awaitable of exports to Hawaii.

IMPORTS INTO THE UNITED STATES.

	1899-1900.	1900-01.	1901-02.
India-rubber goods	$564,088	$478,663	$449,756
Gutta-percha goods	254,332	163,337	127,780
Total	$318,420	$642,000	$577,536
Reexports	12,874	16,888	13,173
Net Imports	$805,546	$625,112	$564,363

AUSTRIA-HUNGARY.

OFFICIAL statement of values of rubber goods imported and exported for the first six months of two years:

	1901.	1902.
Imports	$692,390	$643,287
Exports	765,789	796,676

Some of the important classifications were:

IMPORTS.			EXPORTS.	
1901.	1902.		1901.	1902.
$31,059	$30,044.	Hose	$ 21,599	$ 32,561
22,168	21,680.	Belting	5,164	... ..
39,453	29,029.	Footwear.	203,162	136,822
4,263	12,383.	Shoe elastics	76,166	59,824
74,247	77,879.	Other elastics	56,610	114,129
6,252	7,247.	Toys	27,040	40,844
74,948	68,350 .	Hard rubber goods	206,410	176,529

RUBBER FOOTWEAR EXPORTS—JANUARY-JUNE, 1902.

To—	Kilograms.	To—	Kilograms.
Germany	70,600	Roumania	3,000
Hamburg	7,000	Bulgaria	400
Great Britain	17,600	Russia	100
France	19,700	Egypt	1,200
Switzerland	3,300	China	500
Italy	6,300	British Indies	27,900
Spain	500	Other lands	600
Belgium	5,900		
Greece	600	Total	168,500
Turkey	3,300	Six mos. 1901	250,200

GERMAN RUBBER GOODS EXPORTS.

OFFICIAL statement of values (in marks) for the first six months of three years:

	1900.	1901.	1902.
Threads and sheets	1,445,000	1,463,000	1,621,000
Coarse rubber goods	10,698,000	5,982,000	6,314,000
Fine rubber goods	824,000	536,000	474.000
Boots and shoes	798,000	716,000	1,095,000
Hard rubber	220,000	109,000	139,000
Hard rubber goods	4,053,000	3,627,000	4,244,000
Rubber coated fabrics	2,474,000	2,029,000	2,151,000
Elastic fabrics and hosiery	128,000	158,000	163,000
Hemp and rubber hose	750,000	892,000	1,018,000
Rubber clothing	706,000	832,000	919.000
Unclassified	71,000	58,000	80,000
Total	22,167,000	16,502,000	18,218,000

This list does not embrace rubber toys, which are classified under the general heading of toys, or bicycle tires, which are included in "bicycles and parts." There are also to be added insulated wire to the value of 2,873,000 marks in the first half of 1901 and 2,097,000 marks for the same period in 1902.

GERMAN TRADE IN RUBBER BOOTS AND SHOES.

Weights in kilograms—first six months of 1902:

	Imports.	Exports.		Imports.	Exports.
Great Britain	12,400	145,400	United States	70,800	...
France	....	3,700	Other lands	3,000	39,800
Belgium	....	7,100			
Denmark	....	3.000	Total	363.800	199,000
Sweden	12,200	....	Six mos. 1901.	444,600	130,100
Russia	261,700	....	Six mos. 1900.	432,600	145,100
Aus.-Hungary	3,700	....			

FRANCE.

VALUE of imports and exports of manufactures of India-rubber for the first six months of three years—francs converted at 19.3 cents:

	1900.	1901.	1902.
Imports	$1,368,370	$1,358,527	$1,363,352
Exports	1,057,833	846,884	929,102

The official returns show an increase in imports of belting, hose, and the like; a decrease in unvulcanized sheets and vulcanized threads, and in footwear; and stationary figures relating to tissues and clothing. In exports an increase has occurred in belting and hose, a slight increase in clothing, and a decrease in other classes.

RUBBER BOOT AND SHOE TRADE.

VALUES (expressed in United States money) of imports and exports of various countries—first six months of 1902:

	Imports.	Exports.
United States	None.	$100,267
Great Britain	Not stated.	338,913
Germany	$519,554	260,610
France	63,883	82,990
Austria-Hungary	29,029	136,822

American exports in this branch are larger in the last half of the year. Such exports amounted in value, in the twelve months ending June 30, 1902, to $1,046,315.

RUBBER GOODS EXPORTS FROM NEW YORK.

VALUES for four weeks ended July 29, 1902:

Argentina	$ 534	Cuba	4,537	New Zealand.	6,024
Australia	7,017	Dan. W. Ind.	43	Nova Scotia.	68
Aus.-Hung'y	150	Denmark	2,257	Peru	241
Azores	25	Dutch E. Ind.	25	Philippines	2,747
Belgium	217	Ecuador	77	Russia	80
Brazil	2,063	France	3,635	San Domingo.	23
British Africa	3,834	Great Britain.	39,248	Spain	952
Brit. E. Ind.	1,000	Germany	11,632	Sweden	121
Brit. Guiana	14	Haiti	36	Switzerland.	5,520
Brit. W. Ind.	566	Holland	111	Turkey	3,953
Central Amer.	1,386	Italy	1,060	Venezuela	144
Chile	101	Japan	13,204		
China	463	Mexico	3,814	Total	$117,578
Colombia	556	Netherlands.	100		

A TELEGRAPH CODE FOR RUBBER MEN.

THE International Cable Directory Co. (New York and London) have in press a telegraphic code book specially prepared for all who have to do with the business of handling or manufacturing or dealing in India-rubber, Gutta-percha, and asbestos, in any shape or form. This Rubber Code will comprise about 22,000 words and phrases and is designed to be so complete, so far as these particular branches, that no one who uses it can fail to find in it what he needs. Every known article of India-rubber and Gutta-percha goods is included, with code words for dimensions, quality, etc., with the result that users will be able to reduce their expenses for telegraphing and cabling to a surprising extent. For example, three code words may be made to say:

Ship by fast freight 50 feet rubber air drill hose, internal diameter ¾ inches, 4 ply (3 ply inside, 1 ply outside.)

The book contains also a list of the leading rubber manufacturers and dealers in rubber goods, together with their registered cable addresses and code words to represent the titles of the compaines and firms, so that in this matter alone an important saving can be made. The official vocabulary words in the Rubber Code differ from those in the Western Union Telegraphic Code, published by the same company, so that the two codes will not conflict in any way; indeed, holders of the Rubber Code will be able to use it in conjunction with the Western Union Code, which has thousands of general terms and phrases not to be found in any technical code. It may be mentioned that the Western Union Code is on file in telegraph and cable offices over a great part of the world, and in all United States embassies, legations, and consulates, and that the Rubber Code will be similarly distributed, to the end that holders of it may have the widest possible facilities at command.

From advance sheets of the Rubber Code forwarded to THE INDIA RUBBER WORLD, it can be said that the book has been most carefully compiled and must prove to be a valuable auxiliary to firms in the various lines of manufacture covered by it.

SOME WANTS OF THE RUBBER TRADE.

[262] FROM Germany comes an inquiry for the addresses of the principal elastic webb manufacturers in the United States.

[263] "Will you kindly advise us the names of some manufacturers who manufacture green edge goring?"

[264] From Canada: "Will you kindly furnish us with the names of reliable manufacturers of rubber boots and shoes in the United States who are not associated with the rubber shoe trust?"

THE consul of Austria-Hungary at Saloniki, Turkey, reports that the imports of rubber goloshes there amounts to about 2000 boxes of 50 pairs each (100,000 pairs), of which three-fourths come from Austria. The prices are stated to be so low (2.40 francs, or 46⅓ cents, per pair) that the English product is no longer able to compete in these articles.

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED JULY 1, 1902.

NO. 703,408. Rubber tire. William R. Harris, Akron, Ohio.

703,615. Vaginal syringe. Nicolaus C. E. Schwartz, New York city.

703,616. Vaginal syringe Nicolaus C. E. Schwartz, New York city.

703,896. Manufacture of golf balls. James P. Cochrane, Edinburgh, Scotland.

ISSUED JULY 8, 1902.

704,000. Life preserver. George B. Conley, Cleveland, Ohio.

704,214. Means for longitudinally compressing wired on cushion tires before fitting them into their rims. George Robson, London, England.

704,276. Buggy boot or apron. Heinrich A. Sorensen, Hinckley, Illinois.

704,462. Manufacture of golf balls. Eleazer Kempshall, Boston, Massachusetts.

704,463. Process of making playing balls. Eleazer Kempshall, Boston, Massachusetts.

704,464. Process of manufacturing playing balls. Eleazer Kempshall Boston, Massachusetts.

Trade Marks.

38,572. Rubber tires. The Goodyear Tire and Rubber Co., Akron, Ohio. Essential feature—the words "The Broadway."

ISSUED JULY 15, 1902.

704,677. Process of purifying Gutta-percha. Adolphe Combanaire and Jean de la Fresnaye, Paris, France.

704,748. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

704,838. Playing Ball. Eleazer Kempshall, Boston, Massachusetts.

704,940. Exercising Machine. John C. Korth and August Ganzenmulle, New York city.

704,881. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

704,882. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

704,953. Rubber tire setter. Hugh R. Au'd, Boston, assignor by mesne assignments of one-half to John J. McGlinchy, Chelsea, Massachusetts.

Trade Marks.

38,599. Dress shields. The Canfield Rubber Co., Bridgeport, Connecticut.

38,633. Insulating material. American Hard Rubber Co., New York city. Essential feature—the word "Sansohm."

ISSUED JULY 22, 1902.

705,038. Vehicle tire. James Christy, Jr., Washington, D. C.

705,072. Rubber tire. Arthur W. Grant, Springfield, Ohio, assignor to the Consolidated Rubber Tire Co.

705,175. Rubber vehicle tire. Charles H. Wheeler and Franklin W. Kremer, Akron, Ohio, said Wheeler assignor to The India Rubber Co.

705,176. Vehicle wheel. Charles H. Wheeler and Franklin W. Kremer, Akron, Ohio, said Wheeler assignor to The India Rubber Co.

705,177. Vehicle wheel. Charles H. Wheeler and Franklin W. Kremer, Akron, Ohio, said Wheeler assignor to The India Rubber Co.

705,178. Solid rubber tire. Charles H. Wheeler and Franklin W. Kremer, Akron, Ohio; said Wheeler assignor to The India Rubber Co.

705,249. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

705,294. Blanket for use in the art of printing. Joseph E. Rhodes, Boston, Massachusetts.

705,359. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

705,392. Pessary. Dayve B. de Waltoff, Brooklyn, New York.

705,453, Hernial truss. John H. Sherman, Beaverdam, Wisconsin.

ISSUED JULY 29, 1902.

705,615. Yielding hoof pad. Thomas Ryan, Germantown, Pennsylvania.

705,764. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

705,765. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

705,766 Golf ball. Eleazer Kempshall, Boston, Massachusetts, assignor to the Kempshall Manufacturing Co.

705,768. Wheel tire. Hyman Lieberthal, Chicago, Illinois.

705,908. Cushioned horseshoe. Phillip J. Coates, Macon, Georgia.

705,916. Bottle nipple. Phillip Gauss, New York city.

Trade Marks.

38,670. Golf balls. M. Hartley Co., New York city.

38,700. Pneumatic tires for bicycles, carriages and automobiles. Fisk Rubber Co., Chicopee Falls, Massachusetts.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD offices at 10 cents each, postpaid.]

THE ENGLISH PATENT RECORD.

[* *Denotes Applications from the United States.*]

APPLICATIONS—1902.

11,942. John Watson, 136, Albion road, Stoke Newington, London. Watson's "Pneumatic" combined India-rubber tire and rim. May 26.

11,943. Frank John Nunn, Drinkstone, Suffolk. Puncture proof detachable elastic band for pneumatic tires. May 26.

11,945. Edward Alfred Stretton, Birmingham. Pneumatic tires for motor vehicles. May 26.

11,981. James Cottrell and Alfred Henry Smith, 22, Southampton buildings, Chancery lane, London. Locking bands for pneumatic tire covers. May 26.

*11,996. Eleazer Kempshall, 19, Holborn viaduct, London. Golf balls. May 27.

12,009. John Harry Parr, Manchester. Coupling for rubber hose. May 27.

12,010. I. N. Fringer, 2 A, Holborn viaduct, London. Solid cored pneumatic tire for vehicles. May 27.

12,065. Frederick Thorpe, 38, Chancery lane, London. Non-skidding device for pneumatic and other tires. May 27.

*12,006. Samuel Nelson House, Dallas, Texas, United States. Machine for shrinking tires to vehicle wheels. (Date of application in the United States, May 27, 1901.) May 27.

12,096. Francesco Toni, 70, Chancery lane, London. Pneumatic tires. May 27.

12,124. John Sharpe Wilbrahm Edmunds, 111, Hatton garden, London. Pneumatic tires. May 27.

12,191. Francesco Toni, 70, Chancery lane, London. Pneumatic tires. May 28.

12,234. McAdam Alexander Birkmyre, Whitewell, near Belfast. The M. A. B. combined horse shoe and pad. May 29.

12,313. Paul Low and August Thiel, 18, Buckingham street, Strand, London. Improvements in tires. May 29.

12,344. Joseph Fairbairn and Robert Mitchell, Jr., Glasgow. Contrivance for sustaining compression in a clinched in rubber vehicle tire. May 31.

12,370. Emil Leonard Fehr, Liverpool. Grooved ground rollers of machines for covering wire with rubber. [Conrad Felsing, Junior, Germany.] May 31.

12,376. Edward Fry Wood, "Starcross," Monkseaton, Northumberland. Pneumatic boot tree. May 31.

*12,462. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Golf balls. (Date of application in the United States, March 24, 1902.) May 31.

*12,468. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Golf balls. May 31.

*12,473. Henry Harris Lake, 45, Southampton buildings, Chancery lane, London. Artificial sponge. [Alexander Straus, United States.] May 31.

*12,475. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Playing balls. May 31.

*12,477. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Balls for playing golf and other games. May 31.

*12,479. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Balls for playing golf and other games. May 31.

*12,480. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Playing balls. May 31.

12,486. Thomas Ried, Northfield, Worcester. Inflatable tubes for pneumatic tires. June 2.

12,524. Arthur Walters, 24, Granby street, Bethnal green, London. Unpuncturable spring tire. June 2.

12,629. Harry Lucas, 18, Southampton buildings, Chancery lane, London. Valves for pneumatic tires. June 3.

12,646. Ernest Lambe, 77, Colmore row, Birmingham. Exercising and developing apparatus. June 3.

12,675. John Wesley Blodgett, 18, Buckingham street, Strand, London. Pneumatic tires and methods of manufacturing the same. June 3.

12,741. Frank Holcombe, Cardiff. Pneumatic tires. June 4.

12,772. Harry Alfred Goodyear, 38, Chancery lane, London. Pneumatic tires. June 4.

12,807. James Menzies, 39, Winterbrook road, Herne Hill, London. Process for rendering cloth and other fabrics waterproof. June 5.

13,063. Charles Cunningham Black, Glasgow. Machine for stamping, pressing or moulding metals, coal peat, clay, Gutta-percha, India-rubber, paper pulp and the like. June 9.

13,077. Jonathan Aldous Mays, 75, Chancery lane, London. Elastic wheel tires. June 9.

13,081. Isidore Clifford, 20, Grosvenor street, London. Pneumatic tire protector. June 9.

13,163. George Henry Hastings, 43, Gibson square, London. Puncture proof tire. June 10.

13,280. George Edward Heyl-Dia, 6, Lord street, Liverpool. Pneumatic tires for wheels. June 11.

13,284. Moritz Weiss, 45, Southampton buildings, Chancery lane, London. Tires for vehicle wheels. June 11.

13,294. Henry Harris Lake, 45, Southampton buildings, Chancery lane, London. Process for applying insulating waterproofing to various articles. [The Société Anonyme le Carbone, France.] June 11.

12,815. St. Mungo Manufacturing Co., and Alexander Cochrane Wood, Glasgow, Golf ball. June 12.

13,379. Mindle Lipowsky, 614, Old Ford road, Bow, London. Outer covers for rubber tires, solid or pneumatic, for cycles or vehicles. June 13.

13,423. Charles Habley Burt, 321, High Holburn, London. Pneumatic tires. June 13.

13,700. William George Paterson, Glasgow. Covers for pneumatic wheel tires. June 17.

13,702. George Ellis, Rochdale. Pneumatic tires. June 17.

13,805. Joseph Goldsworthy, Manchester. Solid rubber tires for vehicles. June 18.

13,889. Charles George Fernie, West Wratting Park, near Cambridge. Pneumatic tubes for wheels of cycles and vehicles. June 19.

13,944. Jens Jacob Christian Albers, Alleestrasse 221, Barmen, Germany. Process for folding elastic textile goods and for bulging out the folds at the same time, and apparatus used therein. June 19.

13,951. Stephane John Joseph Drzewiecki, 60, Queen Victoria street, London. Pneumatic tires. June 19.

13,968. James Condie Stewart Sandeman and Andrew Herd Scott, Glasgow. Golf balls. June 20.

14,074. Hugh McCulloch, Glasgow. Preventing the puncturing of pneumatic tires. June 21.

14,100. Russel Biglow Sigafoos, 33, Chancery lane, London. Reels or spools for flexible hose. June 21.

PATENTS GRANTED.—1902.

[Complete specifications have been printed of the following patents, since our last report, the numbers and dates given relating to the original applications, noted already in THE INDIA RUBBER WORLD.]

2,513. Life buoys. Freytag, A., Leignitz, and Stiller, H., Breslau, both in Germany. February 5, 1901.

*2,524. Rubber tire. Starr, F. W., Springfield, Ohio, United States. February 5, 1901.

*2,757. India-rubber horseshoes. Riley, J., No. 248 West Twelfth street, New York. February 8, 1901.

2,952. Rubber steps for vehicles. Barker, B., Sheffield, Yorkshire. February 12, 1901.

3,482. Golf balls. Kingzett, C. T., Chislehurst, Kent. February 18, 1901.

3,592. Viscose. Cross, C. F., and Bevan, E. J., 4, New court, London, and Beadle, C. Erith, Kent. February 19, 1901.

3,734. Metal and rubber tire. Gare, T., New Brighton, Cheshire. February 21, 1901.

3,802. Pneumatic tire. Seddon, E. H., Brookside, Cheshire. February 22, 1901.

*3,931. Punching bags. Kotten, H. G., Englewood, New Jersey. February 23, 1901.

4,167. Method of attaching pneumatic tire to wheel rim. Crosby. A. S., and Billings, J. G., Evesham, Worcestershire. February 26, 1901.

4,238. Pneumatic tire protector. Legrand, J. P., 9, Rue Danton, Levallois-Perret (Seine), France. February 27, 1901.

4 360. Boots and shoes. Matthew, P. M., Victoria India Rubber Mills, Edinburgh. March 1, 1901.

*4,548. Pneumatic tire cover. Harloe, M., Hawley, Pennsylvania, United States. March 4, 1901.

4,563. Pneumatic tire cover. Hubbard, J., Seven Kings, Essex. March 4, 1901.

4,732. Pneumatic tires. Stowe, G., Edgbaston, Birmingham. March 6, 1901.

4,803. Method of devulcanizing India-rubber. Duwez, O. F. J., Rue D'hores, Enghien (Hainaut), Belgium. March 6, 1901.

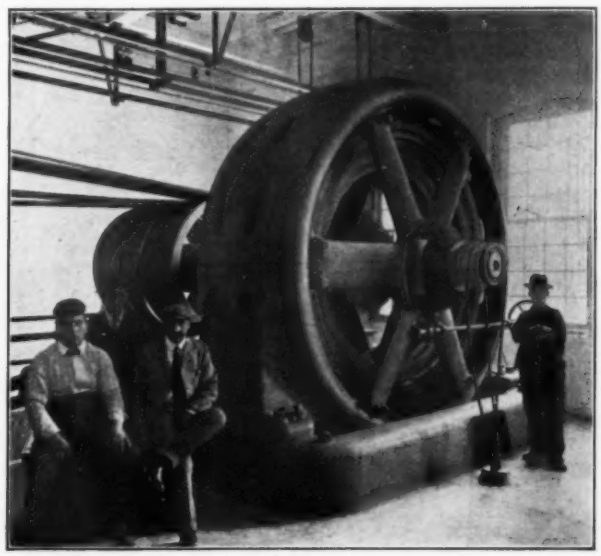
RECLAIMING RUBBER WITH POWER FROM NIAGARA FALLS.

THE new factory of the U. S. Rubber Reclaiming Co., located at Buffalo, New York, was formally opened on Thursday morning, August 21, in the presence of a large party of prominent citizens of Buffalo and visitors from a distance. It was notable, although the great plant is only just completed, that every piece of machinery ran perfectly and there was no suggestion of breakdown, nor was there even the appearance of confusion that is likely to be observed at such a time.

The factory buildings are all brick, three stories in height, of mill construction and equipped throughout with the best of labor saving devices. All of the machinery is set on bed rock, some $20,000 having been expended on foundations alone. The power, which is furnished from Niagara Falls by the Cataract Power Co., is applied through an induction motor which is the largest for commercial purposes in the world, and has been tested for 1500 horse power. This is connected with a rope drive said to be one of the best pieces of work that the Dodge company, of Mishawaka, have ever produced. There is also another induction motor of 150 H. P. which drives the conveyors, elevators, etc.

The factory is equipped throughout with the Estey sprink-

VIEW OF ONE SIDE OF THE MILL ROOM.
[Fourteen Sheeting Mills in a Line 160 Feet Long.]



THE LARGE INDUCTION MOTOR.

lers, and is insured in the Factory Mutual Insurance companies. In addition to this, there is, for fire equipment, a set of hydrants, a large fire pump, a tank on the main tower, and an ample reservoir in the basement.

The machinery, which was furnished by the Birmingham Iron Foundry, consists of sheeting mills 18"×42", washers 16"×40", crackers 16"×30", and grinders 22"×70", the latter using 75 horse power each. There is also an outfit of devulcanizers 5'×40', lead lined cooking tubs, and 20 foot washing tubs with rotary cones.

The boiler house is separate from the rest of the plant, and is made of steel with a concrete roof, the boilers being erected by the Phœnix Boiler Works of Meadville, Pennsylvania. In addition, the factory is fitted with acres of screen dryers through which hot air is forced by fans, with belt conveyers running from one floor to another, and indeed with every device that exists in the way of economy.

The capacity of the plant at the present time is thirty tons per day, but it can be easily increased to fifty tons. In addition to this the company have, it will be remembered, a plant at Derby, Connecticut, which has a daily capacity of ten tons, and also another factory with a daily capacity of eleven tons in Jersey City. The work of the latter plant, however, will be later transferred to Buffalo.

A notable exhibit at the time of the opening was the great stock of old shoes that were stacked in the factory yard and also in the great storehouse, there being over $500,000 worth of shoes in sight, besides large stocks at the other factories.

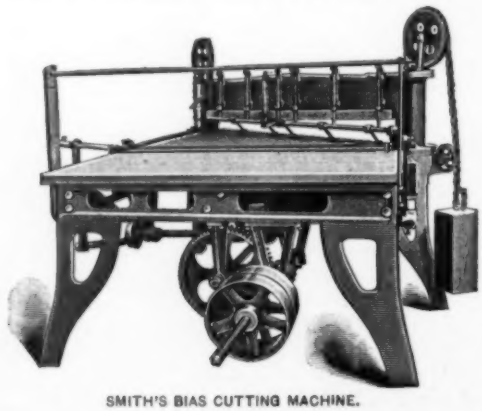
Among those at the opening were Theodore S. Bassett, president, and R. A. Lowenthal, vice president, of the company; the Editor of THE INDIA RUBBER WORLD; Colonel F. C. Ward, commissioner of public works of Buffalo; Councilman Christian Klinck; C. M. Huntley, president of the Cataract Power Co.; D. B. Sherwood, S. G. Sherwood, F. Cushing; A. and W. Oppenheimer, partners in Oppenheimer & Co., and representatives of the leading Buffalo newspapers.

The party was shown over the works by Messrs. Bassett and Lowenthal, assisted by Mr. Fred. Griscom, the company's engineer. General Superintendent W. F. Askam, unfortunately, was detained at home by illness. After the starting of the machinery by Mr. Huntley and the subsequent trip through the works, the visitors assembled in the handsomely equipped office, where a caterer had prepared a bountiful lunch. The officers of the company were the recipients of warm congratulations from all present, and a leading Buffalo capitalist who was present predicted that ere long other large rubber plants would locate in Buffalo and be run by the same constant and economical power—Niagara Falls.

THE CUTTING OF RUBBER COATED FABRICS.

PERHAPS the most difficult problem that mechanical engineers have had to solve in connection with the rubber manufacture is the cutting of bias strips from rolls of rubber coated cloth. So important a question is this that a great deal of money and ingenuity have been expended in the attempt to weave fabrics on the bias, but so far without success. At the present time wide strips such as are used in hose and tires are cut by hand, as the cost of designing a machine to do this work would be considerable and the present hand cutting is done at a low cost. One of the machines shown in accompanying illustrations is known as the Birmingham Bias cutting machine. This is used very largely by concerns who manufacture rubber shoes and is designed for cutting up the friction stock into "piping"—that is, strips about ¾ inch wide. These machines are made in two widths—28 and 46 inches—the former cutting strips at the rate of 100 a minute and the latter about

BIRMINGHAM BIAS CUTTING MACHINE.

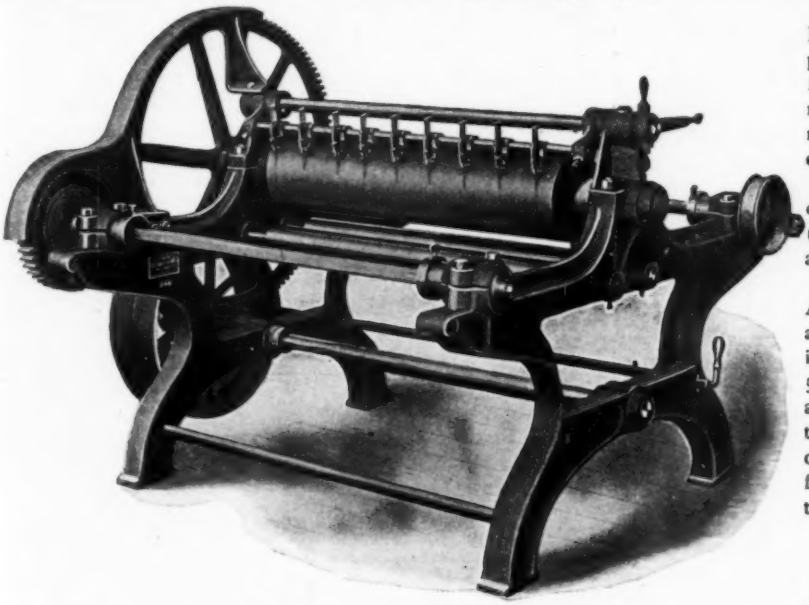


SMITH'S BIAS CUTTING MACHINE.

60 a minute. Another bias cutting machine, known as Smith's, has already been described in THE INDIA RUBBER WORLD. This was intended to cut fabrics for hose, tires, mackintosh bindings, piping, and the like. The machine was planned in three sizes, the smaller to cut 24 inch strips into widths of 6 inches and less; the medium sized to cut 44 inch goods into widths of 6 inches and less; while the larger machine was built to cut 66 inch goods into widths up to 18 inches.

Machines also used in almost all mechanical rubber factories

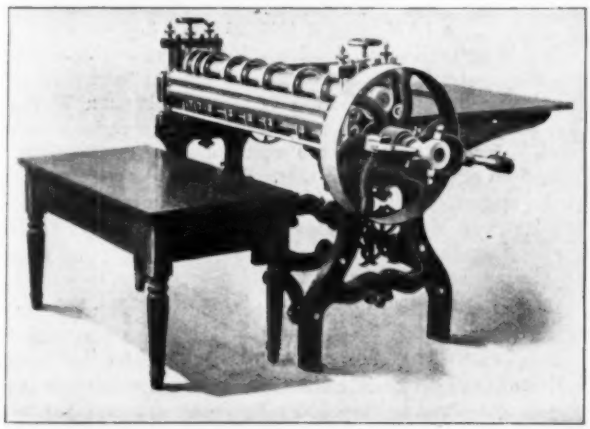
are what is known as "duck slitters." Reference to the illustration of the Farrel duck slitter will show any one familiar with the rubber business how the roll of duck is put in the machine, run over the grooved rolls, and slit by the knives that fit into these grooves. These knives, by the way, are adjustable, so that strips of various widths can be made. The cutting roll of the Farrel machine is 44 inches long and is designed to cut cloth up to 42 inches wide, and into strips from 1 inch wide upward, varying by eighths of an inch. It is furnished



THE FARREL DUCK SLITTING MACHINE.

with a friction brake for holding the cloth roll, with a geared friction wind-up and two cloth bars each 1¼ inches square, and nine knives and knife holders.

It is interesting to note in this connection, that manufacturers of paper boxes use almost an identical mechanism for cutting paper into strips; indeed, a very simple adaptation of the Robinson machine, shown in the illustration, makes a duck slitter that is used by certain of the large mills. While in ordinary practice the duck slitter has rigid knives, the Robinson cutter is fitted with double knives which make a shear cut.



THE ROBINSON DUCK SLITTER.

RUBBER NOTES FROM EUROPE.

THE balance sheet of the Leyland and Birmingham Rubber Co., Limited (Birmingham, England) for the year ending June 30, 1902, shows a profit of £27,608 13*s.* 5*d.* After paying a total dividend for the year of 7½ per cent. (on £233,557 share capital), and placing a liberal sum to the reserve account, the balance carried forward is £6151, against £4369 last year.

=The Dunlop Pneumatic Tyre Co., Limited, announce that a reduction in the price of their tires will date from October 1, due to the fact that the company now manufacture the whole of their requirements, instead of having to pay, as formerly, intermediate profits to other firms.

=Imports of rubber goods at Bordeaux during 1901 amounted to 61,936 pounds (including 5488 pounds of rubber boots and shoes), and in 1900 to 34,384 pounds.

=The Norddeutsche Seekabelwerke, Actiengesellschaft, cable manufacturers at Nordenham, Germany, have decided to increase their capital from 4,000,000 to 5,000,000 marks, by the issue of new shares at a preminm of 2½ per cent., to enable the company to construct the new Atlantic cable. The company have placed an order for a second cable steamer, of 5000 tons, to be employed in laying the cable.

MOSELEY'S A LIMITED LIABILITY COMPANY.

DAVID MOSELEY & SONS, LIMITED, is the name of a new company registered under the Public Companies act, in England, to acquire the business of India-rubber manufacturers and merchants, carried on by the brothers David, James F., and Oswald G. Moseley, as David Moseley & Sons, at the Chapel Field works, Ardwick, Manchester. The capital is £300,000 (=$1.459.950), in £10 shares, of which 14,000 are preferred and 16,000 ordinary. The three brothers are named as permanent governing directors. It was in 1857 that David Moseley began business in a primitive way, by proofing cloth in a small room off Rusholme road, Charlton-on-Medlock, assisted by his two sons, Joseph and Charles, then respectively 19 and 17 years of age. While they were still young men the death of the father left them with the responsibilities of a growing business, which they met so successfully that the firm of David Moseley & Sons grew to be one of the most important in the rubber industry in Great Britain, its output embracing nearly the whole list of rubber products. Charles Moseley died in 1887 and Joseph Moseley ten years later. The present heads of the firm are the sons of Joseph Moseley, and have been actively associated with the conduct of the business for years.

M. H. LEWIS has resigned as vice president and general manager of the Mexican Gulf Agricultural Co., taking effect August 1, and on January 1 will enter a New York banking firm handling Mexican and South American securities. In August, 1894, Mr. Lewis formed a planting corporation, with $50,000 capital. At the end of eight years the capitalization had increased to $950,000, on which 8 per cent. was paid last year. While coffee has been the principal interest, the work done under Mr. Lewis's supervision has helped not a little in advancing the rubber planting industry.

NEWS OF THE AMERICAN RUBBER TRADE.

PENNSYLVANIA RUBBER CO.'S NEW FACTORY.

THE Pennsylvania Rubber Co. (Erie, Pa.) have been busy for some months past in establishing a new plant at Jeannette, Pa., a point 26 miles from Pittsburgh, their plans for which were outlined in THE INDIA RUBBER WORLD of March 1, 1902 (page 191). The main building is rapidly nearing completion, and some thirty car loads of machinery has already been delivered and is being set in place. The company expect to move to their new quarters during October.

ANOTHER OHIO TOWN WITH A RUBBER FACTORY.

THE Excelsior Hard Rubber Co., which for several years have been manufacturing hard rubber covered harness mountings at Canton, Ohio, recently were reorganized, with an increase of capital from $10,000 to $25,000. The new officers are: S. F. Lechner, president; W. M. Tracy, vice president; T. E. Wilson, treasurer; and M. E. Fisher, secretary—all of Mineral City, Ohio. The factory has been removed to the latter place, where a three story building has been purchased for it, and the company will take up the manufacture of hard rubber for *X*-ray apparatus and other novelties, while continuing their old line of production. They have just obtained from the Birmingham Iron Foundry a new washer, mixer, and calender.

FIRE IN A PITTSBURGH RUBBER STORE.

ON the morning of July 29 the stock of rubber goods carried by the large jobbing house of Stewart Brothers & Co., No. 917 Liberty street, Pittsburgh, Pa., was almost totally destroyed by fire. The damaged stock was sold to a salvage company of Chicago, and removed to the latter city. The firm at once leased a nearby building—Nos. 937-939 Liberty street—where goods due them from the factory soon began to arrive, and within a week shipments were being made to customers. The firm inform THE INDIA RUBBER WORLD that they expect to be reëstablished in their old location early in the present month, with an entire new stock, and that all their fall orders on rubber and leather goods will be shipped on time.

AMERICAN CIRCULAR LOOM CO. (BOSTON).

THIS company has opened offices at 27, Chancery lane, London, for introducing its flexible loom conduit in Great Britain. Mr. J. H. Cummings, European agent for the company, will be in charge. The product is claimed to possess many advantages for interior wiring, and it is stated that in the United States alone 15,000,000 feet were used last year. The tube is constructed of a spiral of insulating fiber, wound with heavy Pará rubber friction tape, over which is a continuous woven jacket of cotton. The whole tube is then saturated with an insulating compound, and finally run through powdered mica, thus producing a tube that is at once flexible, waterproof, and fireproof.

MR. SHEPARD'S GIFTS TO NORFOLK.

AT the annual meeting of the Norfolk (Connecticut) Water Co., on August 5, President Frederick M. Shepard presented to the company a handsome building known as "The Lodge" and a good deal of land on the shores of Lake Wangum, the source of the town's water supply. The water company thus becomes owner of most if not all of the land surrounding Lake Wangum. The officers elected for the year are: Frederick M. Shepard, president; R. I. Crissey, vice president; Edmund Brown, secretary and treasurer. The other directors are F. M. Shepard, Jr., E. C. Stevens, H. A. Stanard, and M. N. Clark. Norfolk, in Litchfield county, was the birthplace of Mr. Shepard, who is president of the Goodyear Rubber Co. (New York), and for some years was president of the United States Rubber Co., and who has contributed liberally to the welfare of his native town. Recently he aided in the improvement of the roads of Norfolk, and it is reported that a piece of property owned by him in that town to be utilized as a site for the fire department.

CONVENTION OF FIRE ENGINEERS.

THERE are likely to be some interesting exhibits by the fire hose manufacturers in connection with the annual convention of the International Association of Fire Engineers, to be held in New York, September 16-19. Chief engineers of fire departments, fire commissioners, members of council fire committees, superintendents of fire insurance patrols—in fact, representatives of every class connected in an official or semi official way in the management or conduct of fire departments, or those who are interested in fire extinguishing methods, are expected to embrace this opportunity to become associated with the most powerful fire organization in the United States.

HARTFORD RUBBER WORKS CO.

THE annual conference of the officers, branch managers, and traveling representatives of this company, at Hartford, was attended by everybody in these classes, and was regarded as one of the most successful in the history of the company. On Thursday, August 14, the whole force was entertained by the company at a "shore dinner," at Branford Point, Connecticut, in connection with which a program of sports was arranged.

GROWTH OF THE W. D. ALLEN COMPANY.

THE W. D. Allen Manufacturing Co. (Chicago), are now operating their new brass foundry in a building erected by them for the purpose, and are in a position to fill promptly orders for brass goods advertised in their Catalogue No. 16. During the past year the demand has been beyond their capacity to fill, but the new foundry will enable them to handle properly their rapidly developing business. The new building is 167 × 60 feet, with all the modern improvements, including the celebrated saw tooth roof, and is said to be, in respect to light, ventilation, and convenience for the workmen, the best equipped brass foundry in the West, if not in the United States.

A NEW RUBBER JOBBING CENTER.

THE Wiggins Rubber Co., Limited (Shreveport, Louisiana)—a new concern mentioned under the head of "new corporations" on another page—advise THE INDIA RUBBER WORLD that Shreveport has been a good jobbing center for several years. More than $15,000,000 worth of groceries alone were jobbed out of that place last year. Shreveport is an important cotton market, has five national banks and numerous other enterprises, and Messrs. Wiggins regard the location as a good one for a wholesale jobbing business in rubber and other druggists' sundries. They expect to have traveling salesmen to cover east Texas, south Arkansas, north Mississippi, and middle and north Louisiana.

PROFITS OF THE CHEWING GUM "TRUST."

NONE of the industrial consolidations has proved more successful than the American Chicle Co. Chicle, by the way, is a Mexican gum related to India-rubber, and is the basis of the "chewing gum" of commerce. The founders of the company

were fortunate in including all the chewing gum factories in the original organization, and although it may have appeared heavily over-capitalized, the payment of dividends has been maintained, and recent sales of common stock have been made above par—at 110, in fact, and preferred at 91. The company will benefit materially by the removal of the internal revenue tax, dating from June 30, last. The tax of 1 cent per package on chewing gum yielded the United States government $366,530.95 during the fiscal year ended June 30, 1899, and $326,105 49 during the year ended June 30, 1900. The figures are not yet available for the fiscal year ended June 30, 1901, but they will probably not exceed $350,000. This points to a probable average consumption of 35,000,000 packages in the United States alone, not counting exports. One of the American Chicle Co.'s factories, by the way, is located at Toronto, Canada, and its product is not considered in the above estimate. Meanwhile the consumption of crude Chicle has increased, as shown by the records of imports into the United States during the past three fiscal years, as follows:

	1899-1900.	1900-01.	1901-02.
Pounds	2,297,992	3,140,768	4,580,605
Value	$354,720	$753,696	$936,065
Average value	15.4 cents	24 cents	20.4 cents

These figures, by the way, embrace the supplies for Canada. During the week ended August 19 exports of Chicle from New York for Canada amounted to $13,778 and for Liverpool, $850. During a preceding week Chicle valued at $965 went to Australia.——A dividend of 1 per cent. on American Chicle common will be paid September 10.

THE YATMAN RUBBER CO.

MR. H. J. YATMAN, whose surname is now used by a very prosperous company in Harrison, New Jersey, has been connected with the rubber trade now over twenty years. His apprenticeship began in the office of the Riverside Rubber Works (Belleville, N. J.), where he remained for some years, until he formed the Essex Rubber Co., which had a very complete little plant in Newark. He made such a success of small work, particularly in the line of pencil tips, that the American Pencil Co. made him an offer for the whole business, which he accepted. He then incorporated The Yatman Rubber Co., with a factory in Newark, which they later outgrew and moved to larger quarters at Harrison. The new plant gives double the former capacity, yet orders have crowded in to such an extent that the factory is running twenty-two hours a day to keep abreast of them. Mr. Yatman is not only the active man in his factory, but attends to the marketing of the goods as well. His new plant is well fitted with modern labor saving devices, and incidentally it might be related that he is the first of the rubber men to adopt the vertical type of the Hewes & Phillips engine as part of the power plant.

H. J. YATMAN.

RUBBER FOOTWEAR FOR THE INDIANS.

BIDS were opened at the office of Indian affairs, at Washington, on August 5, for supplying rubber footwear. There were thirteen bidders. Contracts were awarded as follows:

J. Edmund Strong (Chicago), for 2190 pairs of boys' arctic overshoes: Sizes 1 to 2, 57¾ cents; sizes 3 to 6, 72 cents.

John Wanamaker (Philadelphia), for 670 pairs of men's rubber boots: Sizes 7 to 11, $1.84. Also: 1165 pairs children's arctics, 45 cents; 420 pairs ladies' and misses' arctics, 49 cents; 910 pairs men's arctics, 72 cents; 632 pairs ladies' rubber shoes, 31½ cents; 370 pairs girls' rubber shoes, 18 cents; 1580 pairs boys and misses' rubber shoes, 23½ cents; 500 pairs men's rubber shoes, 36 cents.

The number of pairs comprised is 8437, and the total value, as nearly as can be computed from these figures, $4867.75. Bids were to be opened at Philadelphia, on August 26, for further supplies.

NEW YORK STOCK EXCHANGE QUOTATIONS.

UNITED States Rubber Co.:

DATES.	Common.			Preferred.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Aug. 2	716	17	15	716	57⅞	56
Week ending Aug. 9	150	15	15	200	57¼	57
Week ending Aug. 16	100	16¼	16¼	100	56	56
Week ending Aug. 23	400	16½	16	....	....	....

RUBBER Goods Manufacturing Co.:

DATES.	Common.			Preferred.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Aug. 2	11,050	22¾	20	500	70	68
Week ending Aug. 9	2,200	21½	20½	100	69	69
Week ending Aug. 16	100	20½	20½	150	69	69
Week ending Aug 23	1,600	20¼	19	600	70	69

BAILEY'S "WON'T SLIP" TIRES IN EUROPE.

A. H. OVERMAN, who will be remembered as the enterprising founder of the Overman Wheel Co. (Chicopee Falls, Mass.) has, for some time past, been in London. While there he fitted his automobile with the Bailey "Won't Slip" tires, and was so delighted with their work on the slippery London pavements, that he connected himself with the well known firm, The Clarkson & Capel Steam Car Syndicate, Limited, of Chelmsford, who have purchased the British patents of Mr. Bailey and will equip their entire output with these tires. Mr. Bailey has also accepted an offer from the same house for the French patents for the same tire.

RUBBER SHOE TRADE IN CANADA.

AS far as can be gathered [says *The Canadian Shoe and Leather Journal*] the amount of early orders is up to the usual average, and the opinion prevails that the season's trade will considerably exceed that of last year. Fewer American shoes have been put on the market, and this has left the home product more chance for expansion. The fight for business among the various companies has been keen, but has not resulted in breaking away in terms or prices to any account.

NEW INCORPORATIONS.

THE Camp Rubber Co. (Ashland, Ohio), July 28, under Ohio laws; capital, $50,000. The Faultless Rubber Co. (Akron, Ohio) are interested in this new manufacturing enterprise, regarding which further details appear in another place.

——The Reese Waterproof Manufacturing Co. (Oakland, California), June 1, under California laws; capital, $200,000. W. G. Reese is president, J. W. Phillips vice president and business manager, A. L. Hamilton treasurer, and C. K. Smith secretary. The company claim to control a compound for waterproofing tarpaulins, horse covers, lap robes, coats, etc., suited for all climates, allowing the goods to retain their flexibility and not calculated to harm the fiber of the goods.

=The Wiggins Rubber Co., Limited (Shreveport, Louisiana), June 24, 1902, under Louisiana laws; capital, $20,000. Allen C. Wiggins, president; J. D. Martin, vice president; E. L. Hickey, secretary and treasurer. The first two named have been connected with the wholesale drug business for several years, and the new firm expect to wholesale everything in rubber goods that is usually handled in retail drug stores.

=The Ohio Wringer Co. (Springfield, Ohio), July 23, under Ohio laws, to manufacture clothes wringers; capital, $15,000. Officers: George D. Leedle, president; M. R. Harris, vice president and treasurer; C. C. Leedle, secretary. The new company succeeds to the business of the Ohio Wringer and Lawn Mower Co. and will operate the factory, discontinuing the manufacture of lawn mowers. George D. Leedle will be superintendent and general manager and Mr. Harris general sales manager.

=Union Rubber Co., August 20, under New Jersey laws, to deal in rubber goods; capital, $100,000. Incorporators: Wilson H. Harding, Nelson L. Petty, Richard C. Chamberlain. The principal office is at Trenton, New Jersey.

=The Henry A. Gould Co., August 7, under New Jersey laws; "to carry on the business of manufacturers, merchants, wholesale and retail, importers and exporters, but to deal especially in rubber and rubber goods;" capital, $125 000. Mr. Henry A. Gould, of New York, informs THE INDIA RUBBER WORLD that the interest of the corporation in rubber will be wholly as merchants. The office in New Jersey will be at No. 525 Main street, East Orange, New Jersey.

=The Sweet Tire and Rubber Co. (Batavia, N. Y.), August 21, under New York laws, to manufacture rubber tires; capital $80,000. Directors: Frank Richardson, Ashton W. Caney, John M. Sweet, and John H. Ward, of Batavia, and Orator F. Woodward, of Le Roy, N. Y. Mr. Richardson was until late president of the Batavia Carriage Wheel Co., Mr. Sweet, superintendent of that company's factory, and Mr. Caney a traveling salesman for it. Mr. Sweet is patentee of a solid rubber vehicle tire now on the market, and has invented new mechanical processes for making and applying tires. A factory will be established at Batavia, for the making of tires at first, with the idea of adding other lines of rubber manufacture.

TRADE NEWS NOTES.

AT a meeting of the stockholders of the Empire Rubber Manufacturing Co., held at the company's office at Trenton, New Jersey, on August 4, Mr. Charles H. Baker was elected vice president and Mr. C. Edward Murray treasurer of the company.

=Mr. E. P. Camp has been appointed New York manager for the Empire Rubber Manufacturing Co. (Trenton, New Jersey) at Nos. 88 90 Reade street. Mr. Camp was formerly connected with the New York office of the International Automobile and Vehicle Tire Co.

=The Ohio Rubber Co. (Cleveland, Ohio) recently leased a three story warehouse in the rear of their store on Superior street, thus giving them much additional room for the large stock of clothing and footwear which their increasing trade compels them to carry.

=The Eureka Rubber Manufacturing Co. (Trenton, New Jersey), the incorporation of which was recorded in the last INDIA RUBBER WORLD, have opened an office in New York at No. 56 Reade street (Telephone 4540-Franklin), in charge of Mr. S. V. B. Brewster, as manager, assisted by Mr. R. A. Strong. Both those gentlemen were connected formerly with the Empire Rubber Manufacturing Co. A Boston store has been opened at No. 289 Devonshire street and a Chicago store at No. 248 Randolph street.

=The Fisk Rubber Co. (Chicopee Falls, Mass.), being obliged by the growth of their tire business to enlarge their premises, have awarded contracts for an extensive addition in the rear of their present buildings.

=The factories of the Boston Rubber Shoe Co. resumed work on August 12, after a two weeks' shutdown.

=Contracts have been awarded for the new factory buildings of the Vulcanized Rubber Co., at Morrisville, Pennsylvania, reference to which was made in the last INDIA RUBBER WORLD, and the company hope to occupy their new plant by New Year's.

=It has often been claimed that no rubber factory or rubber store has been struck by lightning. The store of the New England Rubber Co. (No. 115 Pearl street, Boston), however, was injured by a bolt of lightning which struck across the street, the windows being smashed and mortar, dust, and glass scattered through the store. It was not struck by lightning and perhaps the old saying holds true.

=The annual outing of the employés of the Tyer Rubber Co. (Andover, Massachusetts), on August 2, took the form of a trip by special train to the seashore, at Revere beach. There were 300 in the party, filling six cars, and the day was spent in bathing and such amusements as the place afforded—in addition, of course, to dinner.

=The Davol Rubber Co. (Providence, Rhode Island) have found the "Morris Spring Bottom Duck Basket" very suitable for their use, and have placed orders for several dozen.

=The Concord Rubber Co. (Boston, Mass.) are branding their goods as "union made," with the label of the Boot and Shoe Workers' Union. They are making rubber boots and shoes in two grades, first and second, marked "Concord Rubber Co." and "Bunker Hill," respectively. Paul Brothers, jobbers in Philadelphia, will handle these goods this season.

=Ludwig T. Petersen, a chemist of Revere, Massachusetts, has been appointed manager of the research and test department in the rubber factory of The B. F. Goodrich Co. (Akron, Ohio).

=Three additional 750 H. P. boilers have been ordered by the Farrel Foundry and Machine Co. (Ansonia, Connecticut), from the Hazelton Boiler Co. (Rutherford, N. J.)

=The "Morris Spring Bottom Duck Basket" has been adopted by the Bourn Rubber Co. (Providence, Rhode Island), they having found it an excellent mill basket in every particular.

=At a hearing before a United States commissioner at New York, on July 28, under a charge that the government had been defrauded by the importation as washing crystals at 25 per cent. *ad valorem*, of materials which were practically pure borax, and, therefore, subject to a duty of 5 cents per pound, the expert witness for the government was Durand Woodman, PH.D., an analytical chemist of New York who has a large *clientèle* in the India-rubber trade.

=The Joseph Dixon Crucible Co. (Jersey City, N. J.) are said to have received lately a large contract for graphite, etc. for the Australian market.

=The rubber reclaiming plant at the Millville factory of the Woonsocket Rubber Co., on August 16, was closed indefinitely. The plant had been closed once before, but was started again after the burning of the reclaiming plant of the United States Rubber Co., at Naugatuck, in February, 1898.

=Myer J. Herman, agent for the Brockton (Mass.) Rubber Scrap Co., has the New England selling agency for the Eureka Cement Co., of Newark, N. J. The trade will be canvassed by C. G. Hearty, of Brockton. The Brockton company invite inquiries for their prices on rubber cement balls.

=Charles Taylor, representing the Diamond Rubber Co. (Akron, Ohio), while in Pittsburgh recently, was quoted by a newspaper there as saying: "I have received some of the largest orders upon this trip that I have ever booked in Pittsburgh. The market is exceptionally strong for belting, and I find that the general use of automobiles has given an impetus to our tire business. The automobile seems to have a firm hold in Pittsburgh."

=The Bridgeport Elastic Fabric Co. have been incorporated, at Bridgeport, Connecticut, to manufacture elastic and non elastic webbing fabrics, with Arthur J. Moore, president; Samuel Lownds, secretary; and Arthur Liggins, treasurer. The company occupy a rented factory building but own the machinery used.

=The sale is reported of the factory of the Model Rubber Co. (Woonsocket, Rhode Island), to Fred. L. Smith, proprietor of the Byfield Rubber Co. The Model Rubber Co. was organized some four years ago by men who had been employed by the Woonsocket Rubber Co., to make rubber footwear. They met with small success and the factory has not been in operation for nearly a year.

=The Goshen Rubber Works (Goshen, Indiana) have equipped a rubber reclaiming plant, which is now in operation.

=The Methuen Rubber Co. (Methuen, Massachusetts) have been so successful in the marketing of their electrical specialties that they are planning to enlarge their factory and add considerable new machinery.

=Orville L. Leach, on August 22, petitioned for a temporary receiver for the Emery Tire Co. (Providence, Rhode Island), claiming that the company are indebted to him.

=The Electric Vehicle Co. (Hartford, Connecticut) have added a new line of gasolene motor vehicles to their production, for which purpose they have acquired all of the inventions relating to automobiles of Fred A. Law, of Hartford, who becomes engineer of the company's gasolene department.

=C. M. Woodward, a well known manufacturer of smaller mechanical goods, in Boston, will take charge of that line of work for the Plymouth Rubber Co. (Stoughton, Mass.)

=Winslow H. Chadwick informs the trade that from this date he will be located at No. 292 Devonshire street, Boston, as New England selling agent for the Empire Rubber Manufacturing Co. (Trenton, New Jersey.)

=The Manhattan Rubber Manufacturing Co. (No. 18 Vesey street, New York) are arranging to engage in the manufacture of solid rubber vehicle tires, which will be marketed under two brands—"Manhattan" and "Fulton."

BOSTON RUBBER CO. OF MONTREAL.

THE factory of the Boston Rubber Co. of Montreal, Limited, (St. Jerome, Quebec), is at present being run under the direction of Mr. John J. McGill, pending probable action of changing the corporate title of the company. It will be remembered [see THE INDIA RUBBER WORLD June 1, 1902—page 302] that the Montreal company won a suit brought against them in the Dominion exchequer court, by the Boston Rubber Shoe Co., to enjoin them from using the word "Boston" in marking their rubber footwear, but on the case being appealed to the supreme court, a decision was given against them.

PERSONAL MENTION.

DAVID WILLIAMS CHEEVER, M. D., LL. D., who was elected recently to the board of overseers of Harvard University, is a brother of the late John H. Cheever, the rubber manufacturer. Dr. Cheever has been a member of the faculty at Harvard for half a century, being now professor of surgery *emeritus*.

=Carl Otto Weber, PH.D., of Manchester, England, an expert in the chemistry of rubber who now has in press a work on the nature of vulcanization, was a recent visitor to the offices of THE INDIA RUBBER WORLD, having just returned from Central America, whither he went to study problems connected with the cultivation of India-rubber.

=Mr. Ed. O. Kramer, of Antwerp, who has been for three years in hitherto unexplored rubber fields in Peru, was a recent visitor to the offices of THE INDIA RUBBER WORLD.

=Messrs. Max Lowenthal, of New York, and Otto Meyer, of Boston, are spending a couple of weeks in the Adirondacks, at Lake Placid.

=Mr. R. Eccleston Gallaher, secretary of the New York Insulated Wire Co., has lately been at Thousand Islands, where he recuperated from a serious attack of gastric fever.

=Mr. Amadée Spadone, president of the Gutta Percha and Rubber Manufacturing Co. (New York), is ending his summer vacation at Saratoga Springs, where a family reunion occurred on the occasion of his birthday, on August 29.

=Mr. R. E. Hotchkiss, superintendent of the Walton works of the Liverpool Rubber Co., Limited (Liverpool, England), accompanied by his wife, spent his August vacation in Ireland. On September 1 Mr. Hotchkiss begins his third year as superintendent of this branch of the Liverpool Rubber Co.

=Mr. James Hardman, president of The Hardman Rubber Co. (Belleville, New Jersey), is spending his vacation at Lake George, New York.

=Mr C. J. Bailey, of C. J. Bailey & Co., Boston, is spending the heated term at Monument Beach, Buzzards Bay, Massachusetts.

=Mr. George P. Whitmore, secretary of the Boston Belting Co. (Boston), is spending his vacation at Squirrel Island, Maine.

=Mr. H. N. Towner, of the Memphis, Tennessee, rubber trade, was a recent visitor to New York and Boston, his trip embracing also Montreal and Chicago.

PERSONAL NOTES FROM AKRON, OHIO.

BEFORE he last left for Europe, Mr. O. C. Barber, whose name is familiar in connection with The Diamond Rubber Co., sent a check to the Akron Poor department, which was used at his suggestion, for giving a picnic to 125 aged and infirm men and women.

=Colonel George T. Perkins, president of The B. F. Goodrich Co., is erecting a summer residence on Perkins Hill, within a stone's throw of "Perkins manor," the home of his father, the late Colonel Simon Perkins, "Father of Akron." The locality is already the residence of Messrs. C. C. Goodrich, R. T. Marvin, and B. G. Work, and has gained the local soubriquet of "Rubber Hill."

=Vice President A. H. Marks, of the Diamond Rubber Co., left for Maine on August 14, to spend several weeks fishing and touring in his automobile.

=Secretary W. L. Wild of The India Rubber Co. spent the latter part of August at the meeting of the Fraternal Congress, in Denver, Colorado. Mr. Wild was until July president of the National Union, and takes a lively interest in fraternal societies in general.

=J. W. Rhodes, for many years telegraph operator and utility man in the offices of The B. F. Goodrich Co., has removed to Zanesville, Ohio, to become ticket agent for the Baltimore and Ohio railroad.

=The will of the late Mrs. Helen Wright, of Chicago, widow of Rufus M. Wright, of Morgan & Wright, bequeaths $16,000 in cash to relatives in Akron. The total of cash bequests made by Mrs. Wright is $105,000.

THE RUBBER TRADE AT AKRON.

BY OUR RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: A local newspaper publishes a "story" to the effect that a strenuous effort will be made to organize a union among the rubber workers of Akron. Except for two or three short lived affairs, there has never been a rubber workers' union in Akron, and the tire makers are the only workmen who ever organized. Even when their union was at its strongest, it never included nearly all the tire workers, and enthusiasm among its members was lacking. Talks with union labor leaders here disclose the fact that they have no hope of ever organizing such unions among the Akron rubber workers as exist in some other local industries. One reason, doubtless, is that a considerable number of the employés of the different rubber factories are stockholders in a small way, and special efforts are made to take care of those men whose work shows that they have the interest of their employers at heart. A policy of liberality is pursued by manufacturers in the matter of holidays, and there is a general friendly feeling between the workmen—especially the skilled class—and their employers. The B. F. Goodrich Co. set the pace in this matter years ago, when theirs was the only rubber factory in Akron. It is not, perhaps, customary for manufacturers to close their works for a half hour that the employés may see a passing circus parade, but that has been done more than once. A man usually is posted along the line of march to give notice of the parade's coming. Once a small boy who was set to perform this task, in his excitement announced the parade's approach a full hour before it appeared. The result was an unusually long shutdown, and a superintendent much put out. The dinner rooms and other conveniences for employés are also a connecting link of friendliness between employers and employed. It can be said that the local rubber manufacturers have the good will of organized labor here, and they have been liberal contributors for the Labor Day celebrations.

Half a dozen rubber manufacturers with whom THE INDIA RUBBER WORLD correspondent has talked are agreed in the belief that the present low prices of crude rubber are not likely to be permanent, and they point to advances during the past month in support of their position. There has been no reduction in the prices of rubber goods because of the decline in the cost of crude rubber from the prices prevailing last year, and the manufacturers believe that any such reduction will be unwise. There has been, however, a tendency to use a better quality of rubber in general products during the prevalence of low prices for crude gum. But the difficulty of advancing prices of products which have once been reduced is quite an effectual barrier against a reduction in selling prices at this time because crude rubber costs less than formerly. Besides, it is felt that the constantly increasing demand for rubber goods, and the certainty as time goes on that new uses will be found for rubber, will make necessary an advance in the cost of raw material.

The Camp Rubber Co. were incorporated July 27 under the laws of Ohio, with $50,000 capital, and are pushing work toward getting under way to manufacture a general line of soft rubber goods. The factory will be located at Ashland, Ohio, where a bonus was given to the company, the city of Ravenna having also tried to secure the location of the factory. The officers are: H. B. Camp, president; L. W. Camp, vice president; Charles E. Campbell, secretary and superintendent; T. W. Miller, treasurer and general manager. Mr. Miller is also general manager and Mr. Camp is president of The Faultless Rubber Co., of Akron. Superintendent Campbell has been for several years with The B. F. Goodrich Co. The company expect to begin operations in September.

The annual meeting of the Firestone Tire and Rubber Co. was held on August 15, the following officers being elected: Will Christy, president; J. A. Swinehart, vice president; Dr. L. E. Sisler, secretary and treasurer; L. H. Firestone, general manager. The company have lately made two good tire contracts in South Africa, and General Manager Firestone states that the tire trade is first class. Vice President Swinehart, who has been in Europe on business since April, is expected home on September 2.

The Alden Rubber Co. have prepared plans for a considerable addition to their factory at Barberton. The company are receiving good orders for their rubber floor tiling, which has been placed in some large new buildings in New York city.

The People's Hard Rubber Co. lately added seven more vulcanizers to their plant, and now employ 275 people and are running night and day. They are active in the electrical supplies' branch, and also in stationer's supplies.

The unfavorable weather—much rain and mud—has affected the tire trade this season, and there has been a quiet in bicycle and solid tire lines which it is believed, now that the prospects seem to point to a dry pleasant fall, is about to disappear. A good autumn and winter business is looked for by the manufacturers in Akron. The weather has not had any noticeable effect, however, upon automobile tires, which have been in such brisk demand that, had the summer been more favorable, the manufacturers might have found it a difficult matter to handle their orders.

The Pure Gum Specialty Co., of Barberton, on August 10, filed with the secretary of state of Ohio a certificate of increase in their capital from $20,000 to $75,000. Treasurer W. A. Johnston states that this increase is to provide for an extension of present lines, including a large addition to the factory, although an addition has only recently been completed.

The Tuscarora Rubber Co., at Beach City, Ohio, is about to emerge from the receivership into which it was cast last May by a disagreement among certain stockholders. W. B. Stewart, of Canton, Ohio, the receiver, has been operating the plant, and, it is said, successfully.

The India Rubber Co. have lately established a distributing depot in Chicago at No. 540 Wabash avenue. John H. Merrell, formerly western sales agent of the company, is in charge, with Frank A. Paulin as his assistant.

The twenty-first annual picnic of The B. F. Goodrich Co.'s employés, at Silver Lake, on Saturday, August 2, was the largest in the history of the company. The attendance was estimated at 8000, including employés of the Akron factory of the American Hard Rubber Co. Everything was free to the employés and their families. There was a varied program of sports, in charge of J. F. McGuire, C. M. Woodruff, J. W. Dunn, William Neal, and E. A. Coken. The principal event was the baseball game between the office and factory teams, the latter winning a $10 prize, 7 to 5. The Hard Rubber workers won a $10 prize in a tug of-war with the Goodrich men.

The employés of The Alden Rubber Co. held their annual picnic at Silver Lake, on Saturday, August 9. A feature of the day was a baseball game between the Alden employés and those of the People's Hard Rubber Co. Both teams wore fancy uniforms obtained for the occasion, the suits of the People's team bearing in large characters the trade mark of the company. The latter team won by a score of 12 to 0.

Charles E. H. Fayerer-Hickey, for sometime a traveling man for The Goodyear Tire and Rubber Co., has been made assistant manager of the company's motor tire department.

REVIEW OF THE CRUDE RUBBER MARKET.

PRICES are higher, all through the list. The advance on Pará sorts is from 4 to 6 cents per pound, on Centrals 1 cent, and on the different African grades from 1 to 6 cents. Last month, in reporting on the market, scarcely a change was made from the quotations of the preceding issue, whereas in the figures below a change is recorded in every item except Accra flake. At the beginning of August, manufacturers, while experiencing a good demand for rubber goods, were still "bearish" in the market for crude. Holders, however, made no pressure to sell, and prices have gradually advanced to the figures presented below. Prices have advanced correspondingly in the European markets, where a good demand is reported, especially for Pará sorts. While receipts at Pará continue larger than in any previous year, there is no accumulation of stocks at that point. The receipts at Pará from July 1 to August 23 amounted to 2170 tons (including 310 tons of Caucho), against total receipts to the end of August last year of 2150 tons. This increase of production of Parás, however, would not be sufficient to depress the market, in view of the active demand for consumption and the fact that for many purposes Pará grades have been preferred to African since the decline of prices which began with the first of the year. Manufacturers have entertained no idea of lowering prices of their products—first, because they have anticipated an advance in the cost of crude rubber, and secondly, because of the higher cost recently of the other raw materials of their industry, particularly of cotton duck, which has increased at least 5 cents a pound within two years. It is of some interest to the crude rubber trade that the Hamburg-American line has placed a steamer in the Amazon river and New York trade, which will tend to competition in freight rates. The incorporation is reported of the The American Crude Rubber Co., under New Jersey laws, with $2,000,000 capital, but this appears to have for its object the exploitation of rubber on the Orinoco.

New York quotations on August 29 were:

PARÁ.		AFRICAN.	
Islands, fine, new	71 @72	Tongues	43 @44
Islands, fine, old	75 @76	Sierra Leone, 1st quality	62 @63
Upriver, fine, new	75 @76	Benguella	48 @49
Upriver, fine, old	78 @79	Cameroon ball	43 @44
Islands, coarse, new	47 @48	Flake and lumps	31 @32
Islands, coarse, old	@	Accra flake	17 @18
Upriver, coarse, new	60 @61	Accra buttons	44 @45
Upriver, coarse, old	62 @63	Accra strips	48 @49
Caucho (Peruvian) sheet	52 @53	Lagos buttons	44 @45
Caucho (Peruvian) ball	56 @57	Lagos strips	47 @48
CENTRALS.		Madagascar, pinky	
Esmeralda, sausage	51 @52	Madagascar, black	
Guayaquil, strip	48 @49	EAST INDIAN.	
Nicaragua, scrap	50 @51	Assam	53 @54
Mangabeira, sheet	43 @44	Borneo	33 @44

Late Pará cables (August 25) quote:

	Per Kilo.		Per Kilo.
Islands, fine	4$550	Upriver, fine	5$300
Islands, coarse	2$450	Upriver, coarse	3$800

Exchange, 3 1/32*d.*

Last Manáos advices (August 29):

Upriver, fine	5$200	Upriver, coarse	3$500

Exchange, 12 3/32*d.*

NEW YORK RUBBER PRICES FOR JULY (NEW RUBBER.)

	1902.	1901.	1900.
Upriver, fine	70 @72	84 @87½	93 @97
Upriver, coarse	55 @56½	61 @63	67 @71
Islands, fine	67 @69	82 @85	87 @93½
Islands, coarse	44 @46	46½@48½	51 @54
Cametá, coarse	46 @48	50 @55	54½@59

In regard to the financial situation Albert B. Beers (broker in India-rubber, No. 58 William street, New York), advises us as follows:

"During July, money rates having stiffened considerably on call and on collateral time loans, there has been less demand for paper, and it has been confined almost entirely to out-of-town banks; rates ruling at 5 @ 5½ per cent. for the best rubber names, and 6 per cent. for those not so well known."

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK. Fine and Medium.	Coarse.		Total 1902.	Total 1901.	Total 1900.
Stocks, June 30..... *tons*	408	5	=	413	879	603
Arrivals, July.....	311	207	=	518	448	308
Aggregating.....	719	212	=	931	1327	911
Deliveries, July	369	200	=	569	603	413
Stocks, July 31.....	350	12	=	362	724	498

	PARÁ. 1902.	1901.	1900.	ENGLAND. 1902.	1901.	1900.
Stocks, June 30...*tons*	65	37	160	1406	1025	1475
Arrivals, July.....	1060	1115	760	369	605	675
Aggregating.....	1125	1152	920	1775	1630	2150
Deliveries July.....	1085	937	550	750	700	650
Stocks, July 31...	40	215	370	1025	930	1500

	1902.	1901.	1900.
World's supply, July 31	2958	2536	2651
Pará receipts, July	1060	1115	760
Pará receipts of Caucho, July	250	145	100
Afloat from Pará to United States, July 31	440	35	98
Afloat from Pará to Europe, July 31	600	632	155

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers:

Old Rubber Boots and Shoes—Domestic	7¼ @ 7⅜
Ditto —Foreign	6¼ @ 6⅜
Pneumatic Bicycle Tires	6
Solid Rubber Wagon and Carriage Tires	7
White Trimmed Rubber	9
Heavy Black Rubber	4¼
Air Brake Hose	2¼ @ 2⅜
Fire and Large Hose	2½
Garden Hose	1½
Matting	1

United States Rubber Imports.—By Fiscal Years.

EXCLUSIVE of Gutta-percha and Pontianak:

FROM—	1899-1900.	1900-01.	1901-02.
United Kingdom.....*pounds*	8,611,061	7,461,673	6,114,107
Germany	1,750,498	1,673,234	1,655,678
Other Europe	6,626,648	7,854,828	7,779,574
Central America	1,428,224	1,279,099	1,121,399
Mexico	420,612	297,691	263,909
West Indies	12,291	45,578	63,094
Brazil	28,175,787	34,900,198	31,532,700
Other South America	1,642,191	1,255,041	1,285,792
East Indies	643,793	466,056	558,621
Other countries	66,033	42,131	40,607
Total.....*pounds*	49,377,138	55,275,529	50,413,481
Value	$31,376,867	$28,455,383	$25,151,559
Average per Pound	63.54 cents.	53.28 cents.	49.89 cents
EXPORTS of Rubber	3,751,698	3,305,945	2,378,353
Net Imports.....*pounds*	45,625,440	51,969,548	48,035,128

Balata.

LONDON, August 15.—At auction 17 packages Venezuelan block bought in at 2*s.* 1*d.*

Hamburg.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The month began with a tendency toward firmer prices in crude rubber, which has become more pronounced as the month has advanced. With the end of the summer vacations, new life has been imparted to business in general, and the quantities of rubber that have been taken out of the market indicates that the rubber industry is again active. The very satisfactory results of the last Antwerp sales tended to strengthen the Hamburg market for Congo sorts. As for Pará rubber, fine old hard cure has been in brisk demand, and 6.85 marks readily paid; the closing prices were even higher, sales being made at 6.90 marks. The demand for new arrivals was less important, with sales at 6.70 @ 6.75. Fine Mollendo forward sold at 6.50 @ 6.55. There were few offers for Bolivian and owners have not pressed to sell. Very large lots of Mozambique, Massai, and Kamerun rubber have been taken out of the market. Sales have been made at the following prices, in marks per kilogram:

Mozambique balls, finest red	6.55@6.60	Massai niggers, fine red	5.80@5.85
Mozambique balls, fine red	6.25@6.40	Batanga balls	3.80@3.85
Mozambique balls, fine	5.80@5.90	Adeli balls, red	6.00@6.10
Mozambique balls, good	5.40@5.50	Mangabeira, Santos fine	4.60@4.65
Gambia niggers, fine white	4.30@4.35	Mangabeira, Bahia ordinary	3.30
		Colombian scrap, good	5.00@5.10
		Guatemala slab, good	4.00

Hamburg, August 13, 1902.

London.

EDWARD TILL & CO., under date of August 1, report stocks:

		1902.	1901.	1900.
LONDON	Pará sorts (*tons*)	—	—	—
	Borneo	130	142	140
	Assam and Rangoon	11	63	31
	Other sorts	398	522	486
	Total	539	727	657
LIVERPOOL	Pará	1739	932	1486
	Other sorts	775	1285	1499
	Total, United Kingdon	3053	2944	3645
	Total, July 1	3595	3128	3653
	Total, June 1	3687	3502	3624
	Total, May 1	3788	3597	3952
	Total, April 1	3326	3522	3104
	Total, March 1	3078	2989	1917
	Total, February 1	2674	3129	1848
	Total, January 1	2794	2901	1855

PRICES PAID DURING JULY.

	1902.	1901.	1900.
Pará fine, hard	2/11½@2/11¾	3/6 @3/8	3/ 9⅛@4/-
Do soft	2/10¾@2/11⅛	3/7 @3/9	
Negroheads, scrappy	2/3 @2/3¾	2/6½ @2/7⅛	2/10 @2/10½
Do Islands	—	1/10⅛@2/1	2/0¾ @2/ 1⅜
Bolivian	3/- @3/0¼	3/8 @3/9	4/-

AUGUST 15.—There has been a much firmer market for a week past. Considerable business has been done at higher prices for nearly all Pará sorts, and there are not many sellers unless at a further advance. Sales at auction comprised fine hard at 3*s.* 1*d.* and soft at 2*s.* 11*d.*@2*s.* 11¾*d.* spot and near; Bolivian at 3*s.* ¼*d.*@3*s.* 1*d.* Peruvians in special demand and large sales of ball at 2*s.* 4*d.* and slab at 1*s.* 11¾*d.*; scrappy in more demand, and sales at 2*s.* 4*d.*; medium grades sell well and the auction to-day went off with good competition at much better prices, in many cases ½*d.*@1*d.* per pound. Mozambique: Of 556 bags 125 sold, good clean stickless sausage 2*s.* 6¼*d.*, fair red ball 2*s.* 2*d*@2*s.* 3*d.*, ditto mixed unripe and heated 1*s.* 9*d.*, low heated 1*s.* 6*d.*, inferior sandy, and heated 11½*d.*, small loose ball 1*s.* 7¼*d.*; Beira ball 2*s.* 5*d.*; Lamu ball, fair mixed green 2*s.* 2¼*d.*

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the inscription sale on July 31 the following results were realized:

	Exposed.	Sold.
Congo sorts (*kilos*)	238,078	229,429
Other sorts	12,752	6,982
Total	250,830	236,411

This result may be considered as satisfactory, the more so as prices show practically no change compared with the values of the preceding sale. The following prices were paid, in francs per kilogram:

		Valuation.	Paid.
10 tons	Lopori I	7.15	7.20
18 "	Upper Congo, small strips	6.	6.02½
29 "	Equateur	6.75	6.80
27 "	Aruwimi	4.90	5.17½
22 "	Uelé	5.75	5.45 @5.60
20 "	Lower Congo thimbles	1.75	2.10 @2.30
32 "	Mongalla strips	6.05	5.75 @5.92

A small sale by inscription will be held on August 22, when 112 tons, chiefly Kassaï sorts, will be exposed. The next regular sale will be held in the second half of September, when the quantity offered will be about 500 tons. Actual stocks here amount to about 750 tons. The total sales during July were about 585 tons.

C. SCHMID & CO.

Antwerp, August 14, 1902.

RUBBER ARRIVALS AT ANTWERP.

JULY 25.—By the *Philippeville*, from the Congo:

Bunge & Co	(Société Générale Africaine) *kilos*	251,250	
Do	(Société Anversoise)	62,810	
Do	(Comité Spécial Katanga)	10,993	
Do	(Société Isangi)	7,365	
Société Coloniale Anversoise	(Société "La Djuma")	3,000	
Do	(Cie. de Lomami)	27,300	
Do	(Belge du Haut Congo)	59,617	
Do	(Süd Kamerun)	6,000	
Société A B I R		62,600	
Comptoir Commercial Congolais		20,580	
M. S. Cols	(Centrale Africaine)	4,200	
Do	(Vegetaux Kassai)	12,100	
Do	(Cie. Anversoise des Plantations du Lubefu)	18,000	
M. S. Cols	(Société "L'Ikelemba")	800	
Ch. Dethier	(Société Belgika)	18,000	
Société Equatoriale Congolaise	(Société L'Ikelemba)	6,382	
Cie. Commerciale des Colonies		4,000	
Do	(Kassaienne)	13,000	
Société Agricole et Commerciale de l'Alima		5,353	
Société Coloniale du Baniembe		1,290	
W. Mallinckrodt & Co	(Alimaienne)	4,127	
Comptoir des Produits Coloniaux	(Cie. de la N'Goko)	1,300	
L. & W. Van de Velde	(Comptoirs Congolais Velde)	11,000	
Evrard Havenith	(Andrea)	3,500	
Soc. An. pour le Commerce Colonial (Est du Kwango)		6,000	620,567

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weights in Pounds.*]

August 1.—By the steamer *Dominic*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	110,800	13,900	49,800	100=	174,600
Boston Rubber Shoe Co.	1,000	.....	20,500	48,000=	69,500
United States Rubber Co.	16,500	1,800	1,200	24,200=	43,700
A. T. Morse & Co.	11,200	3,600	22,000	.....=	36,800
Reimers & Co.	9,300	2,500	26,400	....=	38,200
William Wright & Co.	.....	.....	5,100	.....=	5,100
G. Amsinck & Co.	.....	200	.....	3,400=	3,600
Total	148,800	22,000	125,000	57,000=	371,500

August 12.—By the steamer *Hilary*, from Manáos and Pará:

A. T. Morse & Co.	60,900	16,400	60,400	.... =	137,700
United States Rubber Co.	91,800	17,000	8,900	6,300=	124,000
New York Commercial Co.	63,000	15,600	41,200	600=	120,400
Reimers & Co.	62,800	4,000	34,400	.....=	101,200
William Wright & Co.	8,000	700	29,700	.....=	38,400
Boston Rubber Shoe Co.	.....	.....	13,900	4,400=	18,300

Lawrence Johnson & Co...	5,700	900	.....	.....=	6,600
G. Amsinck & Co.... ...	2,000	.....	.....	.....=	2,000
Total	294,200	54,600	188,500	11,300=	548,600

August 21.—By the steamer *Sobralense*, from Manáos and Pará:

A. T. Morse & Co.....	15,100	7,800	87,400	...=110,300
New York Commercial Co.	50,000	11,800	22,400	300= 84,500
Boston Rubber Shoe Co...	25,000	3,000	3,400	6,000= 37,400
United States Rubber Co...	27,500	2,200	2,900	2,900= 35,500
William Wright & Co.....	9,700	6,000	12,700	....= 28,400
Total	127,300	30,800	128,800	9,200=296,100

August 23.—By the steamer *Karthago*, from Manáos and Pará:

Reimers & Co.....	52,500	16,300	46,700	800=116,300

PARA RUBBER VIA EUROPE.

JULY 24.—By the *Majestic*=Liverpool:

	POUNDS.	
George A. Alden & Co. (Fine).....	10,700	
Reimers & Co. (Fine)	56,000	66,700

JULY 26.—By the *Lucania*=Liverpool:

Reimers & Co. (Fine).....	22,500	
George A. Alden & Co. (Fine).	11,300	33,800

AUG. 1.—By the *Celtic*=Liverpool:

Reimers & Co. (Fine)	23,300	
Reimers & Co. (Coarse)	5,500	28,800

AUG. 4.—By the *Etruria*=Liverpool:

George A. Alden & Co. (Fine).....	16,200	

AUG. 8.—By the *Germanic*=Liverpool:

Robinson & Tallman(Coarse).....	15,500	
Reimers & Co. (Coarse).....	8,000	
George A. Alden & Co. (Fine).....	5,400	
A. T. Morse & Co. (Fine).....	5,000	33,900

AUG. 9.—By the *Campania*=Liverpool:

Reimers & Co. (Fine).....		33,500

AUG. 11.—By the *Condor*=Mollendo:

New York Commercial Co. (Fine)....	4,200	
New York Commercial Co. (Coarse).	500	4,700

AUG. 12.—By the *Moltke*=Hamburg:

Reimers & Co (Fine).....		9,000

AUG. 18.—By the *Umbria*=Liverpool:

George A. Alden & Co. (Fine)... ...	11,500	
Henry A. Gould & Co. (Fine).....	3,500	15,000

AUG. 20.—By the *Oceanic*=Liverpool:

Reimers & Co. (Fine).	43,000	
A. T. Morse & Co. (Coarse).....	27,000	
George A. Alden & Co. (Fine)	7,800	74,800

AUG. 21.—By the *Patricia*=Hamburg:

Reimers & Co. (Fine)		5,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

JULY 25.—By the *Havana*=Mexico:

	POUNDS.	
F. Probst & Co.....	3,500	
H. Marquardt & Co	2,000	
F. Steiger & Co..... .	2,000	
Graham, Hinckley & Co.....	200	7,700

JULY 28.—By the *Comus*=New Orleans:

A. T. Morse & Co.....	3,200	
Manhattan Rubber Mfg. Co.....	1,000	4,200

JULY 30.—By the *Advance*=Colon:

Hirzel, Feltman & Co	10,000	
Lawrence Johnson & Co....	1,600	
G Amsinck & Co,.....	6,800	
M. A. de Leon & Co.....	2,400	
Joseph Hecht	400	
Pomares & Cushman.....	300	21,500

JULY 30.—By the *Alene*=Greytown:

A. D. Straus & Co....	2,500	
E. B. Strout.....	2,000	
Andreas & Co.....	500	
G. Amsinck & Co.....	2,000	
Silva, Bussenius & Co.....	1,000	
Lawrence Johnson & Co....	500	
Kunhardt & Co.....	600	
Samper & Co...	600	
Punderford & Co.....	300	10,000

JULY 30.—By the *Soldier Prince*=Bahia:

J. H. Rossbach & Bros		8,500

AUG. 2.—By the *Esperanza*=Tuxpam:

Graham, Hinckley & Co.....		2,200

AUG. 5.—By the *Alianca*=Colon:

Hirzel, Feltman & Co.....	4,800	
American Trading Co.....	4,300	
A. Santos & Co	1,900	
G. Amsinck & Co..	1,900	
Lawrence Johnson & Co.....	2,200	
J. A. Pauli & Co.....	700	
W. R. Grace & Co.....	400	16,100

AUG. 5—By the *Coleridge*=Bahia:

J. H. Rossbach & Bros.....		29,500

AUG. 6.—By *El Rio*=New Orleans:

Eggers & Heinlein	2,600	
A. T. Morse & Co.	1,000	
K. Mandell & Co.....	400	4,000

CENTRALS—Continued.

AUG. 9.—By the *Vigilancia*=Mexico:

Thebaud Brothers	5,000	
E. Steiger & Co.....	4,000	
Graham, Hinkley & Co,.....	1,500	
H.W. Peabody & Co,.....	1,200	
H. Marquardt & Co...	1,300	
For Hamburg....	7,500	20,500

AUG. 9.—By the *Campania*=Liverpool:

Reimers & Co.		4,500

AUG. 9.—By the *St. Paul*=Southampton:

A. T. Morse & Co.....		5,500

AUG 13.—By the *Terence*=Bahia:

J. H. Rossbach & Bros.....		4,000

AUG. 12.—By the *Finance*=Colon:

G. Amsinck & Co.....	8,400	
Hirzel, Feltman & Co	6,700	
Isaac Brandon & Bros	3,000	
Dumarest & Co.....	2,900	
A. M. Capen Sons.	2,500	
R. G. Barthold....	2,200	
Eggers & Heinlein	2,000	
A. Santos & Co.	1,400	
E. B. Strout.....	900	
W. Loaiza & Co	800	
American Trading Co.....	900	
D. N. Carrington & Co.....	800	
L. N. Chemedlin & Co.....	600	
Lawrence Johnson & Co....	500	
Roldan & Van Sickle	600	
Everett, Heaney & Co	300	
M. A. deLeon & Co.....	200	34,700

AUG. 12.—By the *Athos*=Greytown:

Andreas & Co.....	2,000	
A. D. Straus & Co	1,200	
E. B. Strout....	1,000	
Livingstone & Co.....	500	
Lawrence Johnson & Co	500	
G. Amsinck & Co.....	200	
For London.....	1,500	6,900

AUG. 18.—By the *Minnetonka*=London:

A. T. Morse & Co		15,000

Aug. 18.—By the *Comus*=New Orleans:

A. T. Morse & Co.....		5,000

AUG. 19.—By the *Yucatan*=Colon:

American Trading Co	2,700	
Isaac Brandon & Bros	2,600	
D. N. Carrington & Co....	2,200	
G. Amsinck & Co.....	2,200	
Silva Bussenius & Co.....	2,000	
Joseph Hecht....	1,400	13,100

AUG. 19.—By the *Altai*=Cartagena:

Kunhardt & Co.....	3,500	
G. Amsinck & Co..... ..	2,000	
Jimenez & Escobar..... ..	400	
Samper & Co.....	300	6,200

AUG. 21.—By *El Siglo*=New Orleans:

A. T. Morse & Co.....		3,000

AUG. 22.—By the *Havana*=Mexico:

Thebaud Brothers.....	4,500	
E. Steiger & Co.....	2,000	
American Trading Co.	1,000	
P. Harmony Nephews Co.....	1,000	
F. Probst & Co.	1,000	
H. Marquardt & Co	500	
Willard, Hawes & Co	500	10 500

AUG. 21.—By the *Patricia*=Hamburg:

Reimers & Co.....		4,500

AFRICANS.

	POUNDS.	
JULY 24.—By the *Majestic*=Liverpool:		
A. T. Morse & Co.....	33,500	
George A. Alden & Co....	25,000	
Reimers & Co	11,500	70,000
JULY 26.—By the *Bohemian*=Liverpool:		
Reimers & Co.....		56,000
JULY 28.—By the *Lucania*=Liverpool:		
A. T. Morse & Co.....	34,000	
George A. Alden & Co..... ..	18,000	
Reimers & Co.....	14,500	
Otto Meyer	11,000	
William Wright & Co.....	5,500	83,000
JULY 31.—By the *Graf Waldersee*=Hamburg:		
A. T. Morse & Co.....	6,500	
Reimers & Co.	3,000	
Livesey & Co.....	500	
Traun Rubber Co	500	10,500

AFRICANS—Continued.

AUG. 1.—By the *Celtic*=Liverpool:

A. T. Morse & Co.....		12,500

AUG. 5.—By the *Georgic*=Liverpool:

Reimers & Co.....		12,500

AUG. 5.—By the *Friesland*=Antwerp:

A. T. Morse & Co.....		6,000

AUG. 4—By the *Etruria*=Liverpool:

Reimers & Co.....		11,000

AUG. 5.—By the *Kensington*=Lisbon:

A. T. Morse & Co.....		85,500

AUG. 6.—By the *Pennsylvania*=Hamburg:

Otto Meyer.....		4,000

AUG. 8.—By the *Germanic*=Liverpool:

Reimers & Co....	13,000	
Joseph Cantor.....	11,000	
Robinson & Tallman.....	3,500	27,500

AUG. 9.—By the *Campania*=Liverpool:

United States Rubber Co.....	13,500	
William Wright & Co.....	4,500	18,000

AUG. 11—By the *Panama*=Bordeaux:

George A. Alden & Co....		16,000

AUG. 11.—By the *Vaderland*=Antwerp:

A. T. Morse & Co.....	89,000	
William Wright & Co.	21,000	
Otto Meyer	22,500	
For Boston.....	10,000	142,500

AUG, 12.—By the *Moltke*=Hamburg:

Reimers & Co....	2,500	
George A. Alden & Co.....	1,000	3,500

AUG. 14.—By the *Teutonic*=Liverpool:

A. T. Morse & Co.....	22,000	
Otto Meyer	17,000	
Reimers & Co	2,500	41,500

AUG. 16.—By the *Canadian*=Liverpool:

Reimers & Co		22,500

AUG. 18.—By the *Umbria*=Liverpool:

Otto Meyer.....	12,500	
A. T. Morse & Co.....	500	13,000

AUG 18.—By the *Rotterdam*=Rotterdam:

Reimers & Co....		9,000

AUG. 18.—By the *Kroonland*=Antwerp:

George A. Alden & Co.....	85,000	
Reimers & Co.....	42,000	
A. T. Morse & Co.....	23,000	
Otto Meyer	11,000	161,000

AUG. 20.—By the *Oceanic*=Liverpool:

George A. Alden & Co.....	16,000	
A. T. Morse & Co...	11,000	
Reimers & Co.....	3,500	30,500

AUG. 21.—By the *Patricia*=Hamburg:

Reimers & Co.....	20,000	
George A. Alden & Co.....	13,000	
A. T. Morse & Co.....	4,000	37,000

EAST INDIAN.

	POUNDS.	
JULY 25.—By the *Madura*=Calcutta:		
Reimers & Co.....		19,000
JULY 24.—By the *Majestic*=Liverpool:		
Joseph Cantor.....		13,000
AUG. 15.—By the *Afghanistan*=Singapore:		
William Wright & Co.....	12,000	
D. P. Cruikshank.....	25,000	
Reimers & Co....	11,500	48,500

PONTIANAK.

JULY 26.—By the *Mogul*=Singapore:

Robert Branss & Co	44,000	
George A. Alden & Co.....	154,000	
Reimers & Co	114,000	
William Wright & Co.....	104,000	416,000

AUG. 11.—By the *Queensland*=Singapore:

George A. Alden & Co..... ..	102,000	
W. R. Russell & Co.....	102,000	
Robinson & Tallman....	103,000	
Reimers & Co.....	125,000	
Robert Branss & Co.....	220,000	652,000

EAST INDIANS—Continued.

AUG. 15.—By the *Afghanistan*=Singapore:

Reimers & Co.	510,000	
William Wright & Co	300,000	$10,000

GUTTA-PERCHA AND BALATA.

	POUNDS.
AUG. 12.—By the *Moltke*=Hamburg:	
To Order	6,500
AUG. 6—By the *Pennsylvania*=Hamburg:	
To Order	7,500
AUG. 11.—By the *Queensland*=Singabore:	
George A. Alden & Co.	1,400

BALATA.

JULY 29.—By the *Southwark*=Southampton:	
Henry A. Gould & Co.	4,500
JULY 31.—By the *Prins Willem II*=Trinidad:	
G. Amsinck & Co.	1,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—JUNE.

Imports:	POUNDS.	VALUE.
India-rubber	2,747,595	$1,412,667
Gutta-percha	30,069	11,502
Gutta-jelutong (Pontianak)	1,855,308	39,968
Total	4,632,972	$1,464,137
Exports:		
India-rubber	27,888	$14,785
Reclaimed rubber	88,974	11,420
Rubber Scrap Imported	3,418,737	$167,271

PORT OF NEW YORK—JULY.

Imports:	POUNDS.	VALUE.
India-rubber	3,111,103	$1,335,764
Gutta-percha	22,028	13,896
Gutta-jelutong (Pontianak)	854,224	24,017
Total	3,987,355	$1,373,677
Exports:		
India-rubber	38,741	$21,972
Reclaimed rubber,	48,781	7,218
Rubber Scrap Imported	2,878,755	$170,324

BOSTON ARRIVALS.

	POUNDS.
JULY 3.—By the *Saxonia*=Liverpool:	
Reimers & Co.—African	16,159
JULY 5.—By the *Sagamore*=Liverpool:	
Reimers & Co.—African	11,082
JULY 8.—By the *Zeeland*=Antwerp:	
George A. Alden & Co—African	37,718
JULY 16—By the *Ivernia*=Liverpool:	
Reimers & Co.—African	11,478
JULY 26.—By the *Kroonland*=Antwerp:	
George A. Alden & Co.—African	17,713
JULY 29.—By the *Hanoverian*=Liverpool:	
George A. Alden & Co.—African	21,751
Total Imports	115,851

[Value, $44,650.]

JULY EXPORTS OF INDIA-RUBBER FROM PARA.

IN KILOGRAMS. 1000 KILOGRAMS=2204.6 POUNDS.

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Cmok, Prüsse & Co.	11,560	1,360	28,860	—	41,780	46,920	4,930	13,220	—	65,070	106,850
Frank da Costa & Co.	7,448	3,933	92,840	24,473	128,694	65,860	4,094	28,440	—	98,394	227,088
Adelbert H. Alden	61,590	18,000	83,900	320	163,810	124,200	14,830	12,830	2,400	154,260	318,070
Singlehurst, Brocklehurst & Co.	—	—	—	—	—	4,107	1,228	467	—	5,802	5,802
Kanthack & Co.	9,785	1,400	41	—	11,226	18,766	6,603	1,280	—	26,649	37,875
Neale & Staats	—	—	3,520	—	3,520	11,774	1,179	2,456	716	16,125	19,645
Denis Crouan & Co.	3,831	334	12,357	—	16,522	6,334	672	16,460	—	23,466	39,988
B. A. Antunes & Co.	—	—	—	1,702	1,702	—	—	—	—	—	1,702
R. Suarez & Co.	—	—	—	—	—	24,252	8,374	9,414	1,720	43,760	43,760
Pires, Teixeira & Co.	—	—	—	—	—	4,171	—	1,189	—	5,360	5,360
Direct from Iquitos	—	—	—	—	—	5,957	662	5,254	143,308	155,181	155,181
Direct from Manáos	150,134	29,152	30,749	52,385	262,420	58,592	11,729	10,680	40,248	101,249	363,669
Total for July	244,688	54,179	252,507	79,180	630,554	370,933	54,301	101,690	168,392	695,316	1,324,990
July, 1901	53,865	12,211	52,243	4,384	123,153	475,196	85,135	258,604	138,275	957,210	1,080,263
July, 1900	148,853	28,698	102,431	28,766	308,748	151,995	24,461	119,417	49,211	345,084	653,832

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1902	2,847,868	278,308	2,569,560
January-May	24,295,122	1,573,991	22,721,131
Six months, 1902	27,142,990	1,852,299	25,290,691
Six months, 1901	31,788,882	1,677,533	30,111,349
Six months, 1900	23,915,915	2,220,904	21,695,011

GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1902	2,711,744	2,255,792	455,952
January-May	23,576,224	12,894,896	10,681,328
Six months, 1902	26,287 968	15,150,688	11,137,280
Six months, 1901	26,976,656	15,482,880	11,493,776
Six months, 1900	33,326,832	16,835,840	16,490,992

GERMANY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1902	3,487,220	1,578,280	1,908,940
January May	12,987,920	4,702,280	8,285,640
Six months, 1902	16,475,140	6,280,560	10,194,580
Six months, 1901	14,039,960	3,951,420	10,088,540
Six months, 1900	15,696,340	4,634,960	11,061,380

ITALY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1902	105,820	24,200	81,620
January-May	661,480	*51,040	*610,940
Six months, 1902	767,800	75,240	692,560
Six months, 1901	794,640	92,840	701,800
Six months, 1900	708,620		

*Corrected figures.

FRANCE.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1902	948,420	791,560	156,860
January-May	8,006,900	3,569,720	4,437,180
Six months, 1902	8,955,320	4,361,280	4,594,040
Six months, 1901	9,056,080	5,530,800	3,525,280
Six months, 1900	10,112,520	4,275,480	5,837,040

AUSTRIA-HUNGARY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1902	209,440		209,440
January May	1,199,440	6,820	1,192,620
Six months, 1902	1,408,880	6,820	1,402,060
Six months, 1901	1,132,340	19 360	1,112,980
Six months, 1900			

NOTE.—German statistics include Gutta-percha Balata, old rubber, and substitutes. Italian, French, and Austrian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

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"GUTTAPERCH, TORONTO."

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A.B.C. 4TH ED.,
DIRECTORY,
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THE GUTTA PERCHA & RUBBER M'F'G CO. OF TORONTO LIMITED
TRADE MARK

H. D. WARREN, PRES. & TREAS.
C. N. CANDEE, SECY.

Rubber Belting
Packings, Hose and
Mechanical Rubber Goods

SOLE MANUFACTURERS IN CANADA OF

"Kelly-Springfield" Solid Rubber Carriage Tires,
"Maltese Cross" Carbolized Rubber Fire Hose,
"Eureka," "Paragon" and other High Grades Cotton Fire Hose.

Maltese Cross" and "Lion" Brands Rubber Boots and Shoes.

THE GUTTA PERCHA & RUBBER MFG. CO.

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GRANBY RUBBER CO.

HIGHEST GRADE

RUBBER BOOTS, SHOES, AND CLOTHING.

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THE CANADIAN RUBBER COMPANY

OF MONTREAL.

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OFFICES AND WAREROOMS:

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JENKINS BROTHERS' VALVES.

Perfectly tight under all pressures of steam, oils or acids.
Warranted to give satisfaction under the worst conditions.

Received the Highest Award GOLD MEDAL at the Pan-American Exposition.

Insist on having the genuine stamped with Trade Mark.

JENKINS BROTHERS, New York, Boston, Philadelphia, Chicago.

PHILIP McGRORY,

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Wholesale Dealer in SCRAP RUBBER.

THE HIGHEST CASH PRICE PAID FOR NEW AND OLD, CURED AND UNCURED SCRAP RUBBER OF ALL KINDS.

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THE GUTTA PERCHA & RUBBER MFG. CO.

ESTABLISHED 1856.

MANUFACTURERS OF

Rubber Belting, Packing, Hose, Mats, Matting

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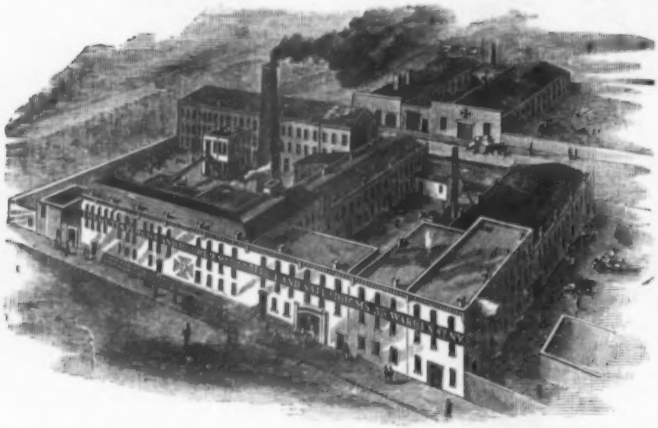

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